

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION V  
HAZARDOUS WASTE MANAGEMENT PERMIT

US EPA RECORDS CENTER REGION 5



479238

Name of Permittee: Miles Inc.

Facility Location: Street Address: 1127 Myrtle Street  
City, State: Elkhart, Indiana

EPA Identification Number: IND 005 068 705

Effective Date: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Authorized Activities:

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, (42 U.S.C. §6901, et seq.), and regulations promulgated thereunder by the United States Environmental Protection Agency (U.S. EPA) (codified in Title 40 of the Code of Federal Regulations (CFR)), Federal permit conditions (hereinafter called the permit) of the RCRA permit are issued to Miles Inc. (hereinafter called the Permittee), for the facility Miles Inc. (Myrtle Street Complex), located in Elkhart, Indiana.

The RCRA permit contains both the effective Federal permit conditions (contained herein) and the effective State permit conditions issued by the State of Indiana's RCRA program authorized under 40 CFR Part 271 (hereinafter called the State permit). When both this permit and the State permit are effective, the Permittee has an effective RCRA permit which authorizes the Permittee to conduct hazardous waste management activities as specified in the RCRA permit.

Permit Approval:

On January 31, 1986, the State of Indiana received final authorization pursuant to Section 3006 of RCRA, 42 U.S.C. §6926, and 40 CFR Part 271, to administer the pre-HSWA RCRA hazardous waste program. Since the State of Indiana has not yet received authorization to administer the entire hazardous waste program requirements of HSWA, additional permit conditions must be issued by the U.S. EPA to address these new requirements. These additional conditions are contained in this permit.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any attachments) and the applicable regulations contained in 40 CFR Parts 260, 261, 262, 264, 266, 268, 270, and 124, and applicable provisions of HSWA.

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This permit is based on the assumption that the information submitted in the permit application dated August 30, 1984, and in any subsequent amendments (hereinafter referred to as the application), and in the certification regarding potential releases from solid waste management units, dated May 17, 1985, is accurate. Any inaccuracies found in this information may be grounds for the termination, revocation and reissuance, or modification of this permit (see 40 CFR 270.41, 270.42 and 270.43) and potential enforcement action. The Permittee must inform the U.S. EPA of any deviation from or changes in the information in the submitted application and certification as soon as the Permittee becomes aware of such deviation or changes.

**Opportunity to Appeal:**

Petitions for review must be submitted within 30 days after service of notice of the final permit decision. Any person who filed comments on the draft permit or participated in the public hearing may petition the Administrator to review any condition of the permit decision. Any person who failed to file comments or failed to participate in the public hearing on the draft permit may petition for administrative review only to the extent of the changes from the draft to the final permit decision. The procedures for permit appeals are found in 40 CFR 124.19.

**Effective Date:**

The RCRA permit is effective when both this permit and the State permit are effective. This permit is effective \_\_\_\_\_, unless a review is requested under 40 CFR 124.19. However, if no comments were received requesting a change in the draft permit, the permit shall become effective immediately upon issuance, and shall remain in effect for 5 years, unless revoked and reissued, or terminated (40 CFR 270.41, 270.42, and 270.43), or continued in accordance with 40 CFR 270.51.

Issued this \_\_\_\_\_ day of \_\_\_\_\_, 1991,

by \_\_\_\_\_

David A. Ullrich, Director  
Waste Management Division

**Miles, Inc.  
Elkhart, Indiana**

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PERMIT CONDITIONS

I. STANDARD CONDITIONS

A. EFFECT OF PERMIT (40 CFR 270.4 and 270.30(g))

The Permittee is allowed to manage hazardous waste in accordance with the conditions of the RCRA permit. Any management of hazardous waste not authorized in the RCRA permit is prohibited.

Compliance with the RCRA permit during its term constitutes compliance, for the purposes of enforcement, with Subtitle C of RCRA, except for those requirements not included in the permit which become effective by statute, or which are promulgated under 40 CFR Part 268, restricting the placement of hazardous waste in or on the land. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 104, 106(a), or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. §9601 et seq., commonly known as CERCLA); or any other law providing for protection of public health or the environment.

B. PERMIT ACTIONS (40 CFR 270.30(f))

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 270.41, 270.42, and 270.43. This permit may also be reviewed and modified at any time by the U.S. EPA to include any terms and conditions determined necessary to protect human health and the environment pursuant to Section 3005(c)(3) of RCRA. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

C. SEVERABILITY (40 CFR 124.16)

The provisions of this permit are severable, and if any provision of this permit, or if the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

D. DUTIES AND REQUIREMENTS

1. Duty to Comply. (40 CFR 270.30(a))

The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit (See 40 CFR 270.61). Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and HSWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, denial of a permit renewal application, or other appropriate action.

2. Duty to Reapply. (40 CFR 270.30(b) and 270.10(h))

The Permittee shall submit a complete application for a new permit at least 180 days before this permit expires unless: a) the Permittee no longer wishes to operate a hazardous waste management facility; b) the Permittee is no longer required to have a RCRA permit; or c) permission for a later date has been granted by the Regional Administrator. The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.

3. Permit Expiration. (40 CFR 270.13, 270.14, 270.50, and 270.51)

This permit and all conditions herein shall be effective for a fixed term not to exceed 10 years, and will remain in effect beyond the permit's expiration date only if the Permittee has submitted a timely, complete application (per 40 CFR 270.10 and applicable sections of 270.14 through 270.29): a) to both the U.S. EPA and the State; and b) through no fault of the Permittee, the Regional Administrator and the State have not issued a new permit, as set forth in 40 CFR 270.51.

4. Need to Halt or Reduce Activity Not a Defense. (40 CFR 270.30(c))

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate. (40 CFR 270.30(d))

In the event of releases or noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health and the environment.

6. Proper Operation and Maintenance. (40 CFR 270.30(e))

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality control/quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

7. Duty to Provide Information. (40 CFR 270.30(h) and 264.74)

The Permittee shall furnish to the Regional Administrator, within the time designated by the Regional Administrator, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

8. Inspection and Entry. (40 CFR 270.30(i))

The Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance, or as otherwise authorized by RCRA, any substances or parameters at any location.

9. Monitoring and Recordkeeping. (40 CFR 270.30(j), 270.31, 264.73, and 264.74)

The Permittee shall retain all reports, records, or other documents, required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the reports, records or other documents. Corrective Action records must be maintained at least 3 years after all Corrective Action activities have been completed. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

10. Reporting Planned Changes. (40 CFR 270.30(l)(1))

The Permittee shall give notice to the Regional Administrator of any planned physical alterations or additions to the permitted facility, as soon as possible, and at least 30 days before construction of such alteration or addition is commenced.

11. Anticipated Noncompliance. (40 CFR 270.30(l)(2))

The Permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Such notice does not constitute a waiver of the Permittee's duty to comply with permit requirements.

12. Transfer of Permits. (40 CFR 270.30(l)(3), 270.40(a), and 264.12(c))

This permit may be transferred by the Permittee to a new owner or operator only after providing notice to the Regional Administrator and only if the permit is modified, or revoked and reissued, pursuant to 40 CFR 270.40(b), 270.41(b)(2), or 270.42(a). Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264, 268, and 270 (including all applicable corrective action requirements), and shall provide a copy of the RCRA permit to the new owner or operator.

13. Compliance Schedules. (40 CFR 270.30(l)(5) and 270.33)

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted to the Regional Administrator no later than 14 days following each scheduled date.

14. Twenty-four Hour Reporting. (40 CFR 270.30(1)(6) and 270.33)

The Permittee shall report to the Regional Administrator any noncompliance with this permit which may endanger human health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include the following:

- a. Information concerning the release of any hazardous waste which may endanger public drinking water supplies; and
- b. Information concerning the release or discharge of any hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:
  - (1) Name, address, and telephone number of the owner or operator;
  - (2) Name, address, and telephone number of the facility;
  - (3) Date, time, and type of incident;
  - (4) Name and quantity of material(s) involved;
  - (5) The extent of injuries, if any;
  - (6) An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
  - (7) Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); steps taken to minimize impact on the environment; whether the noncompliance has been corrected, and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. The Permittee need not comply with the 5-day written notice requirement if the Regional Administrator waives the requirement. Upon waiver of the 5-day requirement, the Permittee shall submit a written report within 15 days of the time the Permittee becomes aware of the circumstances.



15. Other Noncompliance. (40 CFR 270.30(1)(10))

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above within 15 days of when the Permittee becomes aware of the noncompliance. The reports shall contain the information listed in Condition I.D.14.

16. Other Information. (40 CFR 270.30(1)(11))

Whenever the Permittee becomes aware that it failed to submit any relevant facts, or submitted incorrect information to the Regional Administrator in the permit application or in any reports, records, or other documentation provided to the Regional Administrator, the Permittee shall promptly submit such facts or information.

17. Submittal of Reports or Other Information. (40 CFR 270.30(1)(7), (8), and (9), and 270.31)

All reports or other information required to be submitted pursuant to this permit shall be sent to:

Director, Waste Management Division  
RCRA Permitting Branch (5HR-13)  
U.S. EPA, Region V  
230 South Dearborn Street  
Chicago, Illinois 60604

Attention: Indiana Section

18. All other requirements contained in RCRA, as amended, and in 40 CFR 270.30 not set forth herein are hereby fully incorporated in this permit.

E. SIGNATORY REQUIREMENT (40 CFR 270.30(k))

All reports or other information submitted to or requested by the Regional Administrator, his designee, or authorized representative, shall be signed and certified as required by 40 CFR 270.11.

F. CONFIDENTIAL INFORMATION

In accordance with 40 CFR 270.12 and 40 CFR Part 2, Subpart B, any information submitted to the U.S. EPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions, or, in the case of other submissions, by marking the words "Confidential Business Information" on each page containing such information. If no claim is made at time of submission, the U.S. EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2.

G. WASTE MINIMIZATION

The Permittee shall certify at least annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that the Permittee generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment, in accordance with 40 CFR 264.73(b)(9) and Section 3005(h) of RCRA, 42 U.S.C. §6925(h). The certification shall be recorded, as it becomes available, and maintained in the operating record until closure of the facility.

In addition, the Permittee's biennial report shall contain the following:

1. A description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated, as required by 40 CFR 264.75(h);
2. A description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years, as required by 40 CFR 264.75(i). Information for the years prior to 1984 is only required to the extent such information is available; and
3. The certification signed by the owner or operator of the facility or his authorized representative, as required by 40 CFR 264.75(j).

H. DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain at the facility, until closure is completed and certified by an independent registered professional engineer, all items required by 40 CFR 264.73, including the following documents and all amendments, revisions, and modifications to these documents:

1. Waste Analysis Plan, as required by 40 CFR 264.13 and this permit;
2. Operating Record, as required by 40 CFR 264.73 and this permit;
3. Notifications from generators accompanying each incoming shipment of wastes subject to 40 CFR Part 268, Subtitle C, that specify treatment standards, as required by 40 CFR 264.73, 268.7, and this permit;
4. Waste minimization certifications must be part of the operating record as required by 40 CFR 264.73(b)(9);
5. Corrective Action reports and records as required by Condition III of this permit. These reports and records must be maintained for at least 3 years after all Corrective Action Activities have been completed; and
6. Records regarding closed-vent systems and control devices and/or equipment leaks as required by 40 CFR 264.1035, 264.1064, and 264.73, and Condition V.C. of this permit.

## II. LAND DISPOSAL RESTRICTIONS

### A. GENERAL CONDITIONS

#### 1. Compliance with 40 CFR Part 268

The Permittee shall comply with all the applicable self-implementing requirements of 40 CFR Part 268 and all applicable land disposal requirements which become effective by statute (Section 3004 of RCRA).

#### 2. Mixtures

A mixture of any restricted waste with nonrestricted waste(s) is a restricted waste under 40 CFR Part 268.

#### 3. Dilution

The Permittee shall not in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with 40 CFR Part 268, Subpart D, to circumvent the effective date of a prohibition in 40 CFR Part 268, Subpart C, to otherwise avoid a prohibition in 40 CFR Part 268, Subpart C, or to circumvent a land disposal prohibition imposed by Section 3004 of RCRA.

#### 4. Waste Code Lists

The Permittee shall prepare and maintain a current list of the hazardous waste codes handled by the facility that are identified in 40 CFR 268, Subparts B and C. The list shall include all waste codes handled by the facility, and any associated treatment standards, and shall be updated through the inclusion of new treatment standards, as promulgated or amended. This list shall be provided to the U.S. EPA representatives, or their designees, upon request.

### B. TESTING AND RELATED REQUIREMENTS

#### 1. Waste Identification

The Permittee must test, in accordance with 40 CFR 268.7(a), any waste generated at the facility, or use knowledge of the waste, to determine if the waste is restricted from land disposal.

2. Wastes With Treatment Standards Expressed As Concentrations

For restricted wastes with treatment standards expressed as concentrations in the waste extract, as specified in 40 CFR 268.41, the Permittee shall test the treatment residues, or an extract of such residues developed using the test methods described in Appendix I of 40 CFR Part 268 (Toxicity Characteristic Leaching Procedure, or TCLP) to assure that the treatment residues or extract meet the applicable treatment standards of 40 CFR Part 268, Subpart D. Such testing shall be performed as required by 40 CFR 264.13.

3. Wastes Not Subject To Treatment Standards

For restricted wastes under 40 CFR 268.32 or Section 3004(d) of RCRA, which are not subject to any treatment standards under 40 CFR Part 268, Subpart D, the Permittee shall test the treatment residues according to the generator requirements specified under 40 CFR 268.32 to assure that the treatment residues comply with the applicable prohibitions of 40 CFR Part 268, Subpart C. Such testing shall be performed as required by 40 CFR 264.13.

4. Wastes With Treatment Technologies

A restricted waste for which a treatment technology is specified under 40 CFR 268.42(a) may be land disposed after it is treated using that specified technology or an equivalent treatment method approved by the Administrator under the procedures set forth in 40 CFR 268.42(b).

5. Treatment Residues

For restricted wastes with treatment standards expressed as concentrations in the waste, as specified in 40 CFR 268.43, the Permittee shall test the treatment residues (not an extract of such residues) to assure that the treatment residues meet the applicable treatment standards of 40 CFR Part 268, Subpart D. Such testing shall be performed as required by 40 CFR 264.13.

6. Recordkeeping

The Permittee shall comply with all the applicable notification, certification, and recordkeeping requirements described in 40 CFR 268.7(a) and (b).

C. STORAGE PROHIBITIONS

1. The Permittee shall comply with all the applicable prohibitions on storage of restricted wastes specified in 40 CFR Part 268, Subpart E.
2. Except as otherwise provided in 40 CFR 268.50, the Permittee may store restricted wastes in tanks and containers solely for the purpose of the accumulation of such quantities of hazardous wastes as necessary to facilitate proper recovery, treatment, or disposal provided that:
  - a. Each container is clearly marked to identify its contents and the date each period of accumulation begins; and
  - b. Each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility.
3. The Permittee may store restricted wastes for up to 1 year unless the U.S. EPA or its authorized agent can demonstrate that such storage was not solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal.
4. The Permittee may store restricted wastes beyond 1 year; however, the Permittee bears the burden of proving that such storage was solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal.
5. The Permittee shall not store any liquid hazardous waste containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm unless the waste is stored in a storage facility that meets the requirements of 40 CFR 761.65(b). This waste must be removed from storage and treated or disposed as required by 40 CFR Part 268 within 1 year of the date when such wastes are first put into storage. Condition II.C.4. above, that allows storage for over 1 year with specified demonstration, does not apply to PCB wastes prohibited under 40 CFR 268.32.

### III. CORRECTIVE ACTION REQUIREMENTS

#### A. CORRECTIVE ACTION AT THE FACILITY

In accordance with Section 3004(u) of RCRA and the regulations promulgated pursuant thereto, the Permittee must institute Corrective Action(s) as necessary to protect human health and the environment for all releases of hazardous waste(s) or hazardous constituent(s) from any Solid Waste Management Units (SWMUs) at the facility, regardless of the time at which waste was placed in such units.

#### B. CORRECTIVE ACTION BEYOND THE FACILITY BOUNDARY

In accordance with Section 3004(v) of RCRA and the regulations promulgated pursuant thereto, the Permittee must implement Corrective Action(s) beyond the facility property boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Regional Administrator that, despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be addressed under Interim Measure, RCRA Facility Investigation, Corrective Measure Study, and Corrective Measure Implementation phases, as determined to be necessary on a case-by-case basis.

#### C. NO CORRECTIVE ACTION REQUIRED AT THIS TIME

Based on the available information for the facility, no known or suspected releases of hazardous waste(s) or hazardous constituent(s) have been found for identified SWMUs. No corrective action investigation or implementation is required at this time.

D. NEWLY IDENTIFIED SWMUs OR RELEASES

1. General Information

The Permittee shall notify the Regional Administrator, within 30 days of discovery, of the following information requirements for any new SWMU identified at the facility, in accordance with 40 CFR 270.14(d):

- a. The location of the unit on the site topographic map;
- b. Designation of the type of unit;
- c. General dimensions and structural description (supply any available drawings);
- d. When the unit was operated; and
- e. Specifications of all waste(s) that have been managed at the unit.

2. Release Information

The Permittee must submit to the Regional Administrator, within 30 days of discovery, all available information pertaining to any release of hazardous waste(s) or hazardous constituent(s) from any new or existing SWMU.

E. CORRECTIVE ACTION FOR NEWLY IDENTIFIED SWMUs AND RELEASES

The Regional Administrator will review the information provided in Condition III.D., above and may as necessary, require further investigations or Corrective Measures.



#### IV. TOXICITY CHARACTERISTIC

##### A. WASTE IDENTIFICATION

The Permittee may store a total volume of 15,840 gallons in the drum storage area, and 1,400 gallons in the lab chemical storage area, in Building 35, subject to the terms of this permit:

| <u>EPA Hazardous<br/>Waste Number</u> | <u>Waste Description</u> |
|---------------------------------------|--------------------------|
|---------------------------------------|--------------------------|

|      |   |
|------|---|
| D004 | Characteristic of Toxicity Arsenic              |
| D005 | Characteristic of Toxicity Barium               |
| D006 | Characteristic of Toxicity Cadmium              |
| D007 | Characteristic of Toxicity Chromium             |
| D008 | Characteristic of Toxicity Lead                 |
| D009 | Characteristic of Toxicity Mercury              |
| D011 | Characteristic of Toxicity Silver               |
| D018 | Characteristic of Toxicity Benzene              |
| D019 | Characteristic of Toxicity Carbon Tetrachloride |
| D022 | Characteristic of Toxicity Chloroform           |
| D028 | Characteristic of Toxicity 1,2-Dichloroethane   |
| D035 | Characteristic of Toxicity Methyl Ethyl Ketone  |
| D038 | Characteristic of Toxicity Pyridine             |
| D040 | Characteristic of Toxicity Trichloroethylene    |

##### B. WASTE CHARACTERIZATION

The Permittee must use the Toxicity Characteristic Leaching Procedure (TCLP) (Appendix II of 40 CFR Part 261), or use knowledge of the waste to determine whether a waste exhibits the characteristic of toxicity, as defined in 40 CFR 261.24. Use of the TCLP does not exempt the Permittee from also using the Extraction Procedure (EP) toxicity test if required by the State permit conditions.

##### C. TC UNITS IDENTIFIED IN THE STATE PORTION OF THE RCRA PERMIT

If the Permittee is managing newly regulated wastes (based on the TCLP) in units permitted in the State portion of this permit, the Permittee shall operate those units in accordance with the State permit conditions.

##### D. INTERIM STATUS TC UNITS

This permit does not cover the management of newly regulated hazardous waste in previously unregulated units. If the Permittee is managing newly regulated waste (based on the TCLP) in previously unregulated units, those units must be managed in accordance with the interim status standards contained in 40 CFR Part 265.

V. AIR EMISSION STANDARDS

A. PROCESS VENTS

The Permittee shall comply with all applicable requirements of 40 CFR Part 264, Subpart AA, regarding air emission standards for process vents.

B. EQUIPMENT LEAKS

The Permittee shall comply with all applicable requirements of 40 CFR Part 264, Subpart BB, regarding air emission standards for equipment leaks.

C. RECORDKEEPING

The Permittee shall comply with all applicable recordkeeping and reporting requirements described in 40 CFR 264.1035, 264.1036, 264.1064, and 264.1065.

ATTACHMENT I

WASTE ANALYSIS PLAN FROM THE DRAFT PERMIT

### 3. WASTE CHARACTERISTICS

#### 3.1a Chemical and Physical Analyses

Miles generates three primary categories of hazardous wastes. These are classified as:

- (1) Chlorinated wastes containing predominantly solvents such as methylene chloride, chloroform, acetone and butyl acetate,
- (2) non-chlorinated wastes containing predominantly solvents such as acetone, toluene, methanol, ethanol and cyclohexanone, and
- (3) laboratory wastes containing small amounts of relatively pure materials common to a research and development lab.

The first two categories should be considered as general waste divisions rather than strict separations of chlorinated and non-chlorinated materials. Due to the laboratory operations generating the waste each waste stream will have materials in it which are also in the other waste category. These separations are made more to ease our ability to dispose of the waste rather than segregate the materials into two compatibility groups. (Disposal facilities have limits on the halogen content of the wastes they accept for incineration).

All of these wastes are generated due to the research and development activities on-going at Miles' Elkhart facility. Only small amounts of hazardous wastes are generated by the production operations at the Myrtle Street Plant. Information about each of these waste streams is given below.

#### Chlorinated Wastes:

These wastes are water miscible, and are comprised of one or two layers. The liquids can be a variety of colors from blue to yellow to colorless. Odors are essentially solvent sweet and mild. Most of the time, the wastes are partially water, yielding a specific gravity slightly above 1.0. Suspended solids are very low. The pH of the waste is between 5 and 9, per the Miles' Standard Laboratory Solvent Scrap Procedure. A summary of materials which are in the waste and the waste characteristics are listed in Figure 3-1.

CHLORINATED WASTE SOLVENT  
COMPONENTS AND CHARACTERISTICS  
Figure 3-1

| <u>Components</u>     | <u>Ranges by Percent Volume</u> |
|-----------------------|---------------------------------|
| Water                 | 0-55                            |
| Acetone               | 0-12                            |
| Butyl Acetate         | 0-25                            |
| Carbon Tetrachloride  | 0-4                             |
| Chloroform            | 0-85                            |
| 1,2 Dichloroethane    | 0-8                             |
| Ethanol               | 0-12                            |
| Isopropyl Alcohol     | 0-4                             |
| Methanol              | 0-5                             |
| Methylene Chloride    | 0-15                            |
| 1,1,1-Trichloroethane | 0-8                             |
| Toluene               | 0-5                             |
| Xylene                | 0-5                             |

| <u>Components</u> | <u>Range</u>  |         |
|-------------------|---------------|---------|
| Arsenic           | 0-2           | ppm     |
| Barium            | 0-40          | ppm     |
| Cadmium           | 0-1           | ppm     |
| Chromium          | 0-3           | ppm     |
| Copper            | 0-25          | ppm     |
| Lead              | 0-10          | ppm     |
| Mercury           | 0-5           | ppm     |
| Nickel            | 0-8           | ppm     |
| Selenium          | 0-1           | ppm     |
| Silver            | 0-3           | ppm     |
| Thallium          | 0-2           | ppm     |
| Zinc              | 0-4           | ppm     |
| pH                | 5-9           |         |
| Specific Gravity  | 1.1 -1.4      | g/ml    |
| Cyanide           | 0-2           | mg/kg   |
| Sulfide           | 0-10          | mg/kg   |
| Ash Content       | 1-2           | %       |
| TSS               | **            |         |
| Flashpoint        | 10-100        | C       |
| TOX               | 15-75         | %Cl     |
| BTU               | 3,500 - 6,000 | per lb. |

\*\* Due to sample matrix, analysis not performed.

The chlorinated wastes, which Miles generates, are considered listed wastes from non-specific sources with waste codes of F001 and F002. They are listed on the basis of their toxicity. Miles has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

- a. Degreasing solvents from maintenance/shop activities such as 1,1,1-trichloroethane, and
- b. solvents from lab activities such as methylene chloride.

There are also instances in which an alcohol, such as methanol or ethanol, is present in the waste. In those instances, the waste is also classified as DOT flammable and EPA ignitable (D001) with a flash point of less than 100°F.

Other characteristic waste codes which are applicable to this waste stream include the following:

|                      |      |
|----------------------|------|
| Arsenic              | D004 |
| Lead                 | D008 |
| Mercury              | D009 |
| Benzene              | D018 |
| Carbon Tetrachloride | D019 |
| Chloroform           | D022 |
| 1,2-Dichloroethane   | D028 |

Miles has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste and laboratory analyses for the wastes. Laboratory reports for representative samples of the chlorinated waste are given in Appendix D.

The locations where the wastes are generated are shown in Figure 3-2. These are the forms used by the operators when picking up the waste.

#### Non-Chlorinated Wastes:

These wastes are water soluble, and are comprised of one or two layers. Colors range from off-blue to green to colorless. Odors are mild solvent sweet. Wastes are mostly water with a low suspended solids content. The flash point of the material is usually less than 100°F with a pH of between 5 and 9. Summarized physical and chemical characteristics of the waste are given in Figure 3-3.

FIGURE 3-2

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 1-1D-1F-2-8-8A**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                           | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION               |               |       |
|--|-------|------------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|---------------------------|---------------|-------|
|  |       |                                    |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/N-CHLOR | LAB PACK AREA | OTHER |
| 1  | 2nd   | Col. 55 Solv. Cabinet              | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 2nd   | Vit. Packg. (Col. 210) (Will Call) | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 2nd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.76 1 - 5 gal                   | 2 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.78 Sink                        | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.80* 1 - 2 gal                  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.154 Inside Door 1.3.57         | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1D   | 3rd   | 1D.3.61                            | 3 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.18 1 - 5 gal                  | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.34 1 - 2 gal                  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.37                            | 5 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.44                            | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.48                            | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 2  | 1st   | Paint Shop                         | 5 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 2  | 1st   | Electric Shop                      | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8  | 3rd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8  | 3rd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8A   | 4th   | 8A.4.189 Film Coating (Will Call)  | 1 - 55 gal         |         |    |                             |               |       |                           |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                    |                    |         |    |                             |               |       |                           |               |       |

\*WILL CALL FOR 2 GALLON

- Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
- If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

SIGNED \_\_\_\_\_

DATE \_\_\_\_\_

—SEE REVERSE SIDE FOR INSTRUCTIONS—

Form 3.472A Pg. 1 of 4 (R10-90)

 SECTION 3-4  
 ISSUED 10/22/90

FIGURE 3-2 (con't.)

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 3-3J-3K-4-10-44-120**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                                | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION               |               |       |
|--|-------|---|--------------------|---------|----|-----------------------------|---------------|-------|---------------------------|---------------|-------|
|  |       |   |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/N-CHLOR | LAB PACK AREA | OTHER |
| 3  | 1st   | 3.1.28                                  | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 1st   | 3.1.30 Corner 3.1.30 & 3.1.22           | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 1st   | 3.1 Hallway to Pilot Plant              | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 1st   | 3.1.99                                  | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 2nd   | 3.2.28 North East Corner                | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 2nd   | FH - 52                                 | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 2nd   | 3.2.36                                  | 2 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 3J   | 2nd   | Outside Rm. 50-55 (Fume Hood FH-27)     | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3K   | 1st   | 3K.1 FH. 3177 (Across From)             | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3K   | 2nd   | FH - 42                                 | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 4  | 1st   | Citric Plant & Coating Shed (Will Call) | 4 - 55 gal         |         |    |                             |               |       |                           |               |       |
| 4  | 2nd   | Citric Lab (Will Call)                  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 10   |       | Pilot Plant                             | 55 gal             |         |    |                             |               |       |                           |               |       |
| 44   | 1str  | Extraction 44.1.4      3 - 5 gal        | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 44   | 1st   | Extraction 44.1.24                      | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 120  |       | Wastewater Treatment Plant (Will Call)  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 120  |       |   | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
|  |       |   |                    |         |    |                             |               |       |                           |               |       |
|  |       |   |                    |         |    |                             |               |       |                           |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |   |                    |         |    |                             |               |       |                           |               |       |

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—



FIGURE 3-2 (con't.)

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 9 and 17**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                          | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION                |               |       |
|--|-------|-----------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|----------------------------|---------------|-------|
|  |       |                                   |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/NONCHLOR | LAB PACK AREA | OTHER |
| 9  | Bsmt  | Garage-Maintenance Cage NW Corner | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W1 Basement Room 110            | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 1st   | 9.W1 1st Bay Inside Wall          | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 1st   | 9.W2 Bay 3 Under North Sink       | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1202A                   | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 1st Bay North Wall           | 4 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 2nd Bay North Wall           | 4 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 4th Bay Center               | 3 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1204 Bay 3 South Wall   | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1217 - Animal Room      | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W2 Room 214A                    | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W2 - Room B10                   | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W2 Bay 3 South Wall 1 - 2 gal   | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.24 Lab #2                    | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.47 Lab #6                    | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.60 Lab #4 1 - 2 gal          | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.63 Lab #9                    | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                   |                    |         |    |                             |               |       |                            |               |       |

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 18—18A—18B—18C—32**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                          | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION                 |               |       |
|--|-------|-----------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|-----------------------------|---------------|-------|
|  |       |                                   |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/NON-CHLOR | LAB PACK AREA | OTHER |
| 18   | Bsmt  | 18.B.12 By Inside Door            | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18   | Bsmt  | 18.B.24 By Inside Door            | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.6 Under Fume Hood 1 - 2 gal  | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.8 Under Sink 1 - 2 gal       | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.23 Under Sink 1 - 2 gal      | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.26 Under Cabinet             | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.109 Solvent Room             | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18A  | Bsmt  | 18A.B.11.FH30 (Will Call)         | 2 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18A  | Bsmt  | 18A.B.22                          | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | Bsmt  | 18B.B.B02 Across from Hood B02B   | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | Bsmt  | 18B.B.B02 North wall of Hood B02C | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | 2nd   | 18B.2.B205 Hood B205 1 - 5 gal    | 2 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | 2nd   | 18B.2.B219                        | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | 2nd   | 18B.2.B220 Hood B220C             | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | Bsmt  | 18C.B.C05 Hood C05                | 2 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | Bsmt  | 18C.B.C09 Hood C09                | 2 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C103 hood C103 1 - 5 gal    | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C107 Hood C107              | 2 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C114                        | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C115                        | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 2nd   | 18C.2.208                         | 2 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 32   | 1st   | 32.2-3 Under Sink (Will Call)     | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 32   | 1st   | 32.1-4 Under Sink (Will Call)     | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                   |                    |         |    |                             |               |       |                             |               |       |

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

NON-CHLORINATED WASTE SOLVENT  
COMPONENTS AND CHARACTERISTICS  
Figure 3-3

| <u>Components</u>  | <u>Ranges by Percent Volume</u> |
|--------------------|---------------------------------|
| Water              | 10-75                           |
| Acetone            | 0-5                             |
| Butyl Acetate      | 0-5                             |
| Chloroform         | 0-10                            |
| Cyclohexanone      | 0-15                            |
| Ethanol            | 0-5                             |
| Ethyl Benzene      | 0-5                             |
| Ethyl Cellulose    | 0-5                             |
| Ethyl Ether        | 0-5                             |
| Isopropyl Alcohol  | 0-5                             |
| Methanol           | 0-15                            |
| Methylene Chloride | 0-7                             |
| Propanol           | 0-5                             |
| Toluene            | 0-26                            |
| Xylene             | 0-5                             |

| <u>Components</u> | <u>Range</u>  |         |
|-------------------|---------------|---------|
| Arsenic           | 0-2           | ppm     |
| Barium            | 0-40          | ppm     |
| Cadmium           | 0-1           | ppm     |
| Chromium          | 0-2           | ppm     |
| Copper            | 0-25          | ppm     |
| Lead              | 0-15          | ppm     |
| Mercury           | 0-1           | ppm     |
| Nickel            | 0-10          | ppm     |
| Selenium          | 0-1           | ppm     |
| Silver            | 0-4           | ppm     |
| Thallium          | 0-2           | ppm     |
| Zinc              | 0-10          | ppm     |
| pH                | 5-9           |         |
| Specific Gravity  | 0.8 -1.1      | g/ml    |
| Cyanide           | 0-2           | mg/kg   |
| Sulfide           | 0-10          | mg/kg   |
| Ash Content       | 0-1           | %       |
| TSS               | 100-500       | mg/l    |
| Flashpoint        | 10-100        | C       |
| TOX               | 0-15          | %Cl     |
| BTU               | 2,500 - 7,500 | per lb. |

The wastes that are termed non-halogenated are classified as listed hazardous wastes with waste codes of F003 and F005. They are listed on the basis of their ignitability and toxicity. Miles has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

- a. Laboratory and Extraction solvents containing xylene, acetone, ethyl benzene, methyl isobutyl ketone, cyclohexanone, and methanol, and
- b. laboratory and extraction solvents containing toluene.

In most instances, there is also an alcohol, such as methanol or ethanol in the waste adding to the flammability of the mixture. In these cases the waste is also classified as DOT flammable and EPA ignitable (D001) due to a flash point of less than 100°F.

Other characteristic waste codes applicable to this waste include the following:

|                      |      |
|----------------------|------|
| Arsenic              | D004 |
| Lead                 | D008 |
| Mercury              | D009 |
| Benzene              | D018 |
| Carbon Tetrachloride | D019 |
| Chloroform           | D022 |
| Methyl Ethyl Ketone  | D035 |

Miles has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste, the materials used, and the laboratory analyses for the wastes. Laboratory reports for representative samples of the non-chlorinated waste are given in Appendix D.

The locations where the wastes are picked up are also shown in Figure 3-2.

#### Miscellaneous Laboratory Chemicals:

Through the day-to-day operations of the research and development laboratories, a variety of spent miscellaneous lab chemicals are generated. The materials can be in solid, liquid, or gas form and can have a variety of characteristics. Many of

the wastes are listed as toxic or acutely toxic, others are listed only on the basis of their characteristics. Figure 3-4 is a compilation of the materials that could be seen in the storage facility at Building 35. Included in the figure is the listing of the P and U waste codes for the materials and some characteristic waste codes.

These wastes are segregated when they are scheduled for pick up from their generating location on the basis of their compatibility. Information as to their characteristics and properties are obtained from the following publications:

Chemical Dictionary  
Merck Index  
SAX Handbook of Hazardous Industrial  
Chemicals

This information is used with the compatibility chart shown in Appendix E to determine proper segregation.

### 3.1b Containerized Waste

The solvent waste produced at Miles is collected in 5-gallon containers and transferred to 55-gallon drums at Building 35. Virtually all of the wastes, except for a few of the dry laboratory chemicals, contain free liquids. The drums, stored in Building 35, are in a diked, enclosed area that provides secondary containment. There are no other hazardous waste storage areas at the Myrtle Street plant. No wastes are stored without secondary containment; therefore, no testing for free liquids will be performed.

Section 4 provides information on the storage facility and shows the containment system for the building.

FIGURE 3-4

LIST OF WASTE CHEMICALS

| CHEMICAL              | EPA ID# |
|-----------------------|---------|
| Acetaldehyde          | U001    |
| Acetone               | U002    |
| Acetonitrile          | U003    |
| Acetophenone          | U004    |
| Acetyl chloride       | U006    |
| Acrolein              | P003    |
| Acrylamide            | U007    |
| Acrylic Acid          | U008    |
| Acrylonitrile         | U009    |
| Allyl alcohol         | P005    |
| Allyl bromide         | D001    |
| Allyl chloride        | D001    |
| Aluminum chloride     | D002    |
| Aminopyridine         | P008    |
| Ammonium hydroxide    | D002    |
| Ammonium picrate      | P009    |
| Ammonium persulfate   | D001    |
| Ammonium thiocyanate  | P030    |
| Amyl acetate          | D001    |
| Amyl alcohol          | D001    |
| Aniline               | U012    |
| Arsenic acid          | P010    |
| Arsenic oxide         | P012    |
| Arsenic pentoxide     | P011    |
| Aziridine             | P054    |
| Barium acetate        | D005    |
| Barium chloride       | D005    |
| Barium hydroxide      | D005    |
| Barium oxide          | D005    |
| Benzene               | U019    |
| Benzene, 1,2-dichloro | U070    |
| Benzene, 1,3-dichloro | U071    |
| Benzene, 1,4-dichloro | U072    |
| Benzenesulfonic acid  | D002    |
| Benzidine             | U021    |
| p-Benzoquinone        | U197    |
| Benzyl chloride       | P028    |
| Boric acid            | D002    |
| Boron trichloride     | D002    |
| Bromoacetaldehyde     | D001    |
| Brucine               | P018    |
| Butanedione monoxime  | D001    |
| Butyl alcohol         | U031    |
| Butyl methacrylate    | D001    |
| Cacodylic acid        | U136    |
| Cadmium chloride      | D006    |
| Calcium chromate      | U032    |
| Calcium nitrate       | D001    |
| Carbon disulfide      | P022    |
| Carbon tetrachloride  | U211    |

## LIST OF WASTE CHEMICALS

| CHEMICAL                             | EPA ID#    |
|--------------------------------------|------------|
| Carbonyl iron powder                 | D001       |
| Ceric Sulfate                        | D001       |
| Chloroacetyl chloride                | D002       |
| p-Chloroaniline                      | P024       |
| Chlorobenzene                        | U037       |
| Chlorobenzoyl chloride               | D002       |
| Chloroform                           | U044       |
| Chlorophenol                         | U048       |
| Chloropropionaldehyde diethyl acetal | D001       |
| Chlorosuccinimide                    | D002       |
| Chromic acid, and salts              | D002, D007 |
| Chromic sulfate                      | D007       |
| Chrysene                             | U050       |
| Copper Cyanide                       | P029       |
| Cresol                               | U052       |
| Crotonyl chloride                    | D001       |
| Cumene                               | U055       |
| Cyanogen bromide                     | U246       |
| Cyanuric chloride                    | P030       |
| Cyclohexane                          | U056       |
| Cyclohexanone                        | U057       |
| Dibutyl phthalate                    | U069       |
| Dichloroacetic acid                  | D002       |
| Dichlorobenzoyl chloride             | D002       |
| 2,4-Dichlorophenol                   | U081       |
| 2,6-Dichlorophenol                   | U082       |
| 1,3-Dichloropropene                  | U084       |
| Diethylamine                         | D001       |
| Diethyl phthalate                    | U088       |
| Difluorophosphoric acid              | D002       |
| Dihydropyran                         | D001       |
| Diisobutyl aluminum hydride          | D001       |
| Dimethoxypropane                     | D001       |
| Dimethylamine                        | U092       |
| Dimethylcarbamyl chloride            | U097       |
| Dimethyldichlorosilane               | D001       |
| Dimethylformamide                    | D001       |
| alpha, alpha-Dimethyl phenethylamine | P046       |
| Dimethyl phthalate                   | U102       |
| 2,4-Dinitrophenol                    | P048       |
| 2,4 Dinitrotoluene                   | U105       |
| 2,6-Dinitrotoluene                   | U106       |
| Diocetyl phthalate                   | U107       |
| 1,4-Dioxane                          | U108       |
| Epichlorohydrin                      | U041       |
| Ethane, 1,1-dichloro                 | U076       |
| Ethane, 1,2-dichloro                 | U077       |
| Ethane, 1,1,1-trichloro              | U226       |
| Ethanal                              | U001       |
| Ethanolamine                         | D002       |

## LIST OF WASTE CHEMICALS

| CHEMICAL                         | EPA ID#    |
|----------------------------------|------------|
| Ethyl acetate                    | U112       |
| Ethyl alcohol                    | D001       |
| Ethyl bromoacetate               | D002       |
| Ethyl chloride                   | D001       |
| Ethyl chloroformate              | D001       |
| Ethylene dibromide               | U067       |
| Ethylene dichloride              | U077       |
| Ethylene glycol monobutyl ether  | D001       |
| Ethylene glycol monomethyl ether | D001       |
| Ethylenimine                     | P054       |
| Ethyl carbamate                  | U238       |
| Ethyl ether                      | U117       |
| Ethyl formate                    | D001       |
| Ethyl methane sulfonate          | U119       |
| Ferric chloride                  | D002       |
| Fluoboric acid                   | D002       |
| Formaldehyde                     | U122       |
| Formic acid                      | U123       |
| Furan                            | U124       |
| Furfural                         | U125       |
| Gloxylic acid                    | D002       |
| Heptaldehyde                     | D001       |
| Hexane                           | D001       |
| Hexanoic acid                    | D002       |
| Hydrazine                        | U133       |
| Hydrochloric acid                | D002       |
| Hydrogen fluoride                | U134       |
| Hydrogen sulfide                 | U135       |
| Hydroxylamine hydrochloride      | D002       |
| Isobutyl chloroformate           | D001, D002 |
| Lead acetate                     | U144       |
| Lead dioxide                     | D001       |
| Lithium aluminum hydride         | D001, D003 |
| Lithium perchlorate              | D001       |
| Magnesium nitrate                | D001       |
| Manganese dioxide                | D001       |
| Maleic anhydride                 | U147       |
| Malononitrile                    | U149       |
| Mercuric oxide                   | D009       |
| Mercuric sulfide                 | D009       |
| Mercury                          | U151       |
| Methacrylic acid                 | D002       |
| Methanesulfonyl chloride         | D002       |
| Methanol                         | U154       |
| Methylal                         | D001       |
| Methylene chloride               | U080       |
| Methyl ethyl ketone              | U159       |
| Methyl hydrazine                 | P068       |
| Methyl iodide                    | U138       |
| Methyl isobutyl ketone           | U161       |



## LIST OF WASTE CHEMICALS

| CHEMICAL   | EPA ID#             |
|--|---------------------|
| Methyl methacrylate  | D001, D003          |
| Methylstyrene  | D001                |
| Methyl vinyl ketone  | D001                |
| Naphthalene  | U165                |
| 1-Naphthalenamine  | U167                |
| 1,4-Naphthoquinone   | U166                |
| Nicotine   | P075                |
| Nitric acid  | D002                |
| Nitroaniline   | P077                |
| Nitrobenzene   | U169                |
| Nitromethane   | D001                |
| p-Nitrophenol  | U170                |
| Oleum  | D002                |
| Osmium tetroxide   | P087                |
| Oxirane  | U115                |
| Paraldehyde  | U182                |
| Pentyne  | D001                |
| Perchloric Acid  | D001                |
| Periodic Acid  | D001                |
| Phenacetin   | U187                |
| Phenol   | U188                |
| Phosgene   | P095                |
| Phosphoric acid  | D002                |
| Phosphorus oxychloride   | D002                |
| Phosphorus pentoxide   | D001, D002, D003    |
| Phosphorus trichloride   | D002, D003          |
| Phosphotungstic acid   | D001, D002          |
| Phthalic anhydride   | U190                |
| Potassium tert-butyrate  | D001, D003          |
| Potassium cyanide  | P098                |
| Potassium dichromate   | D001                |
| Potassium dichromate, sulfuric acid,<br>mercuric sulfate, silver sulfate | D002, D009,<br>D011 |
| Potassium fluoride   | D002                |
| Potassium hydroxide  | D002                |
| Potassium metal  | D001, D003          |
| Potassium nitrate  | D001                |
| Potassium nitrite  | D001                |
| Potassium permanganate   | D001                |
| Potassium thiocyanate  | U030                |
| Propane, 1,2-dichloro  | U083                |
| Propylene glycol   | D001                |
| Pyridine   | U196                |
| Resorcinol   | U201                |
| Saccharin  | U202                |
| Silver nitrate   | D001                |
| Sodium amalgam   | D001, D003, D009    |
| Sodium arsenite  | D004                |
| Sodium azide   | P105                |
| Sodium bisulfate   | D002                |

## LIST OF WASTE CHEMICALS

| CHEMICAL                  | EPA ID#   |
|---------------------------|-----------|
| Sodium borohydride        | D001,D003 |
| Sodium chlorate           | D001      |
| Sodium cyanide            | P106      |
| Sodium cyanoamide         | P030      |
| Sodium hydroxide          | D002      |
| Sodium metal              | D001,D003 |
| Sodium methylete          | D001      |
| Sodium nitrate            | D001      |
| Sodium nitrite            | D001      |
| Sodium perborate          | D001      |
| Sodium perchlorate        | D001      |
| Sodium periodate          | D001      |
| Sodium trichlorophenate   | D002      |
| Strontium peroxide        | D001      |
| Sulfanilic acid           | D002      |
| Sulfuric acid             | D002      |
| 1,1,1,2-Tetrachloroethane | U208      |
| 1,1,2,2-Tetrachloroethane | U209      |
| Tetrahydrofuran           | U213      |
| Tetramethylsilane         | D001      |
| Thiourea                  | U219      |
| Titanium tetrachloride    | D002      |
| Titanium trichloride      | D001      |
| Toluene                   | U220      |
| Toluenediamine            | U221      |
| Toluenesulfonic acid      | D002      |
| Trichloroacetic acid      | D002      |
| Trichloroethylene         | U228      |
| Triethylamine             | D001      |
| Vinyl chloride            | U043      |
| Xylene                    | U239      |
| Zinc chloride             | D002      |
| Zinc nitrate              | D001      |

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11/17

WASTE ANALYSIS PLAN

MILES INC.

ELKHART, IN

EPA I.D. No. - IND005068705

### 3.2 Waste Analysis Plan

This waste analysis plan describes the sampling and analytical methods which are followed by Miles Inc. to ensure that the wastes that are generated are stored, handled and disposed in an environmentally sound fashion. Miles approaches the testing of its' waste with three main goals:

1. Perform periodic sampling and analysis to verify that no significant change has occurred in the waste both in those generated on-site and those generated off site.
2. Establish the hazards and identify constituents in unknowns generated by new processes or other unknowns.
3. Provide sufficient sampling and analysis to satisfy the waste analysis requirements of 40 CFR Parts 264, 265 and 268 and 329, IAC 3-16 and 3-41.

All analytical work to fulfill these goals is handled by outside contract laboratories. Sampling of the waste is done by on-site personnel with samples being shipped to an appropriate laboratory. Currently, Miles is using National Analytical in Tulsa, OK (a division of USPCI) for periodic analysis of the wastes.

#### 3.2a Necessity for Waste Analysis

There are six general reasons behind the sampling and analysis program at Miles. They are:

1. Identify material compatibility,
2. verify segregation and acceptability for disposal,
3. periodic verification of the waste characteristics,
4. verify constituents and characteristics of off-plant materials,
5. identify unknowns, and
6. determine if the material is a waste restricted from land disposal and whether it meets the prescribed treatment standard.

As was discussed previously, Miles generates three broad categories of wastes. These are termed chlorinated solvents, non-chlorinated solvents, and miscellaneous laboratory chemicals. The chlorinated and non-chlorinated solvents are bulk packaged, separately, in 55-gallon drums, with the

drums stored in Building 35 pending disposal. In order to combine these wastes, we must first ensure that they are compatible. Compatibility determinations are made by both physical testing and the identification of constituents for use in the compatibility charts shown in Appendix E. The site environmental engineer uses the information generated by these waste analyses with the charts in Appendix E to determine proper compatibility categories.

The two solvent streams are regulated as listed wastes from non-specific sources and have severe restrictions on land disposal. For many years, it has been Miles' policy to incinerate the solvents which are generated that cannot be adequately recovered. Analyses of the wastes are needed to determine levels of halogens in the material in order to dispose of the wastes properly. In addition, there are significant restrictions, and corresponding monetary incentives, to segregate wastes into strongly halogenated and non-halogenated (or weakly) materials. Testing is needed to continue to verify this segregation and to provide proof of the separation to the corresponding permitted disposal facilities. It is also needed to confirm the characteristics of the separated materials.

The operations at Miles Myrtle Street complex include a significant amount of research and development work in medical diagnostic, consumer product, and food-related applications. This on-going research results in the production of a variety of wastes that can change over time. Though the specific chemicals used can change, the general types of chemicals used in these R&D areas are relatively constant.

In order to continue to dispose of the materials in a proper and responsible fashion and to ensure safe handling, periodic analyses of the waste are required. These analyses should determine if the waste has significantly altered in its' composition or characteristics.

As the largest facility of Miles in Northern Indiana, and the only hazardous waste storage facility in the Company, the Myrtle Street complex accepts waste from the other Miles' plants in the area. These wastes are classified on the basis of the processes generating the waste, and normally

fit in the categories of chlorinated or non-chlorinated solvents. Analyses of these wastes are needed to periodically confirm that the wastes fall within their broad guidelines for constituents.

Another reason behind the Miles' sampling program is the identification of unknowns. Occasionally, there are small jars of laboratory chemicals that require identification. In order to properly lab-pack the materials for disposal, these unknowns need to be identified. Unknowns may also be generated by new R&D processes. Again, in order to dispose of the materials, the unknown, or its' characteristics, need to be identified.

The final reason behind the Miles' sampling program is the determination of the applicability of land disposal restrictions on the waste. Even though virtually all of the wastes are sent for incineration, Miles is obligated to determine if the waste is restricted, and if so, what treatment standard it needs to meet. If it already meets the required standard, then that must be documented as well.

x  
3.2b General Procedure

Attached in Figure 3-5 is a flowchart indicating the testing decision for the wastes handled at Building 35. Normal incoming wastes are checked to ensure that their pH has been adjusted to levels sufficient for bulk packaging. If the pH is within 5 to 9, then the waste is stored without further tests. If the material is not a standard waste but the constituents are known, then the material will be tested for its' characteristics. These tests will include pH, flash point, cyanide, sulfide, and total organic halogens.

Miscellaneous lab chemicals are inspected to see that the labels are sufficient for classification on the basis of compatibility. The ingredients are compared with the compatibility listing in Appendix E. It is then segregated and stored with like or compatible materials. Should the materials be unknown, either lab chemicals or bulk materials, then constituent and characteristic analyses are conducted. The constituent tests consist of: volatile organics, semi-volatile organics (both extracted by TCLP if required), total metals and TCLP, ~~and~~ EP Tox extraction for metals.

*and* Characteristic tests are pH, flash point, cyanide, sulfide, and total organic halogens. The constituent and characteristic analyses would then be used for compatibility determinations.

FIGURE 3-5

WASTES FROM MYRTLE STREET COMPLEX

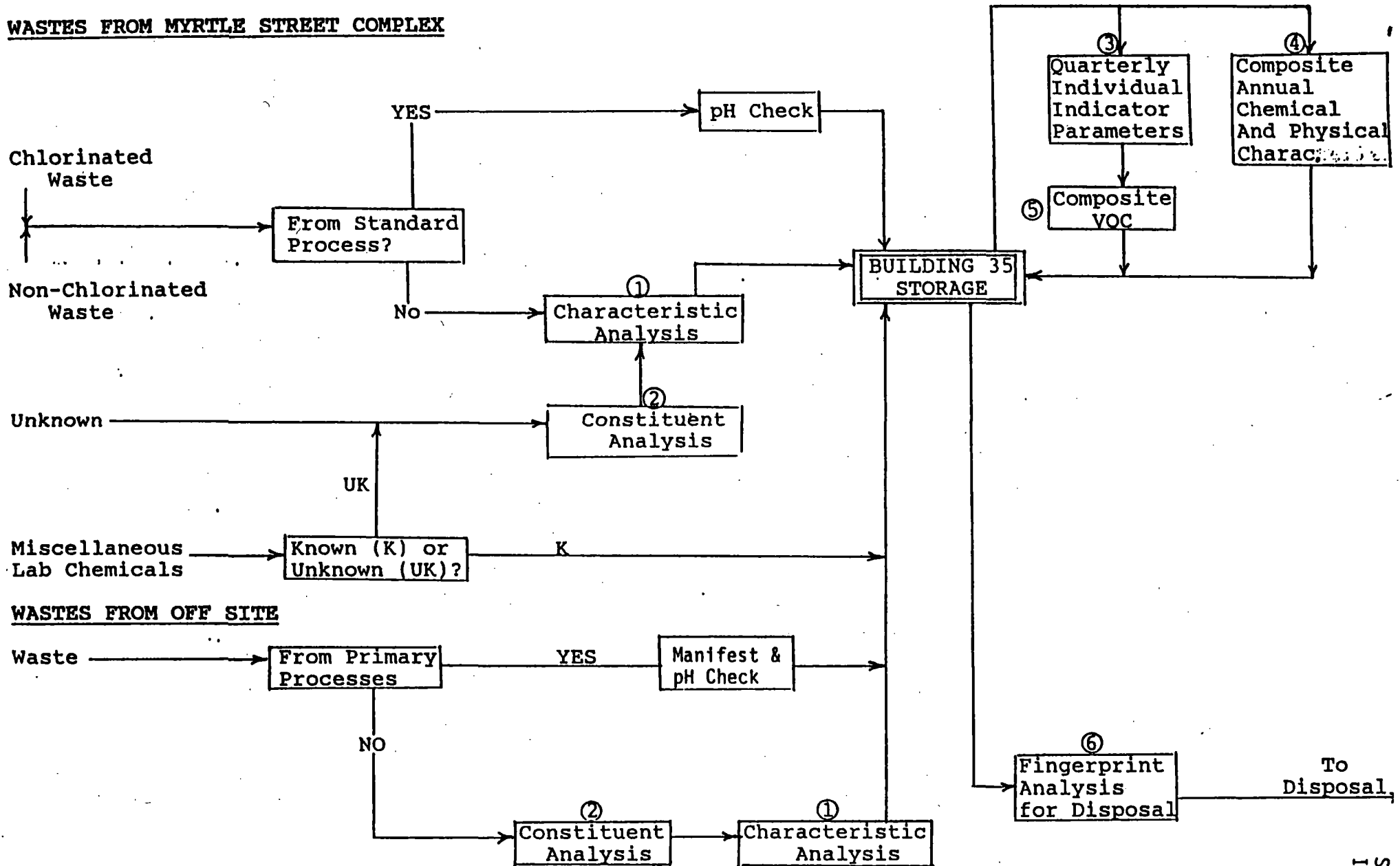


Figure 3-5 (continued)

| <u>Test Set</u> | <u>Tests</u>   |
|-----------------|--|
| 1               | pH, Flash Point, Cyanide, Sulfide, TOX<br>(Individual Samples)   |
| 2               | VOCs, Semi-VOCs, TCLP for Metals and<br>Volatiles, EP Toxic Metals if only to<br>identify the waste (Individual Samples)   |
| 3               | pH, Flash Point, TOX, TOC, Cyanide, Sulfide<br>(Individual Samples of 10% of Chlorinated<br>and 10% of Non-chlorinated Drums in<br>Storage)  |
| 4               | pH, Flash Point, TOX, TOC, Cyanide, Sulfide,<br>BTU Content, VOCs, Semi-VOCs, Heavy Metals,<br>Ash Content, PCB's and Pesticides, TCLP for<br>volatiles and metals (Composite of 10% of<br>Chlorinated and 10% of Non-chlorinated<br>Drums in Storage), EP Tox, if no TCLP |
| 5               | VOC Content and TCLP for Volatiles and Metals<br>(Composite Sample of 10% of Drums in<br>Storage that were used in Test Set 3)   |
| 6               | Tests conducted by disposal facility to check<br>"fingerprint" of the waste. Normally:<br>Specific Gravity, pH, Viscosity, Flash<br>Point, Ash Content, BTU Content, Water %,<br>EP Toxic Metals, Chlorides, Fluoride, PCBs  |



Materials from off site are inspected to ensure that they are generated from the standard Miles' processes and are not new wastes. Prior to initiating a shipment from one of the outlying facilities to Building 35, the site environmental engineer at Myrtle Street is contacted by the off site environmental coordinator. The Myrtle Street site engineer establishes the identity of the waste by discussion with off site personnel and directs them on the testing requirements prior to acceptance at Building 35. If the materials are from our normal primary processes, then the wastes are not tested prior to storage. If the wastes are from new processes, then they are subjected to constituent and characteristic analyses as indicated above.

These procedures for the incoming wastes, from both on-site and off site generators, are intended to identify unknowns, and verify the characteristics and constituents of off site wastes. To satisfy the other requirements for disposal (segregation and acceptability for disposal, verification of characteristics and compliance with the land disposal restrictions), Miles conducts a combination of quarterly sampling for individual indicator parameters and VOCs with annual sampling for complete waste characterizations. These are also supplemented with fingerprint analyses conducted by disposal firms on the wastes as it is approved for shipping.

Quarterly representative random samples of 10% of the chlorinated drums and 10% of the non-chlorinated drums in Building 35 are taken and tested for individual indicator parameters. These parameters are pH, flash point, total organic halogens, total organic carbon, cyanide, and sulfide. Samples from the same random drums are composited for a VOC and EP toxic metals scan. Optionally, TCLP tests for volatiles and metals are performed on the composite and on half of the random samples (i.e., 5% of chlorinated and 5% of the non-chlorinated drums). These samples are taken to provide quarterly verification that there are no significant differences in the waste and that there are no potentially incompatible materials in the waste.

Annually, a complete chemical and physical characterization is conducted on both the chlorinated solvent waste and the non-chlorinated solvent

waste. At random, 10% of the drums in Building 35, of each type, are sampled and composited. This composite sample is tested for pH, flash point, total organic halogens, total organic carbon, cyanide, sulfide, BTU content, volatile organic constituents, semi-volatile organic constituents, pesticides and PCBs, total metals, EP toxic metals, and ash content. A TCLP for volatile organics and metals is also conducted. This analysis is to confirm the overall acceptability of the quarterly indicator monitoring and to provide a complete picture of the waste, at least annually.

Prior to shipment for disposal, wastes are inspected and reviewed for compliance with the land disposal restrictions. If insufficient information is available to classify the material under the land ban rules either through knowledge of the waste or from prior lab sampling, then it will be treated as an unknown and analyzed accordingly.

As a supplement to Miles' quarterly and annual waste analyses, and as a check on the type of wastes disposed at their facilities, the disposal companies that are used subject Miles' waste to fingerprint analyses. The analyses typically consist of the following parameters: pH, flash point, specific gravity, viscosity, ash content, BTU content, % water, EP toxic metals, chlorides, fluorides and PCBs.

3.2c Parameters and Rationale

The parameters for the characteristic and constituent analyses for both periodic waste analyses and "as needed" tests are as follows:

| <u>Parameter</u>             | <u>Rationale</u>  |
|------------------------------|---|
| pH                           | Strongly acidic or basic materials could be incompatible with high solvent concentration waste and could be corrosive to the storage drums. |
| Flash Point                  | Materials could have alcohols or other flammable materials. Flammability classification needed for storage, transport, and disposal.        |
| Cyanide                      | Normal parameter for testing of reactivity.   |
| Sulfide                      | Normal parameter for testing of reactivity.   |
| Total Organic Halogens (TOX) | Used as a screening test to indicate high concentrations of chlorinated solvents. Shorter turn-around and cheaper than a full VOC scan.     |
| Total Organic Carbon (TOC)   | Used as a screening test to indicate high concentrations of organic solvents. Like TOX, TOC is quicker and cheaper than a full VOC scan.    |
| BTU Content                  | Needed in order to establish the applicability of incineration for the waste. It gives the relative heating value of the waste.             |
| Ash Content                  | Also needed to determine the residue remaining after the materials are destroyed. Applicable for incineration of the waste.                 |
| EP Toxic Metals              | Analyzed to determine if any of the wastes have characteristic metal contamination.   |

| <u>Parameter</u>   | <u>Rationale</u>   |
|--|--|
| Volatile Organic Compounds (VOC)                                       | GC/MS analysis to detect volatile fractions in the waste. Materials that are in the waste such as acetone, methylene chloride, toluene, and xylene are identified and quantified.  |
| Semi Volatile Organic Compounds<br>(Acid Extractable and Base Neutral) | GC/MS analysis to detect and quantify any semi volatile constituents in the waste.   |
| Pesticides and PCBs  | Periodic test to verify that no pesticides and/or PCBs are in the waste.   |
| TCLP   | Required for testing of waste for compliance with the land disposal restrictions treatment standards. Also required as a new characteristic waste analysis (40 CFR 261). Note that a TCLP organic extraction analysis will be used instead of a straight VOC/SVOC scan when appropriate. |

### 3.2d Test Methods

The test methods to be employed in the applicable analyses are listed in Figure 3-6.

To ensure that the laboratory analyses provided by the contract laboratory for Miles are adequate, Miles will require the laboratory to follow at least the minimum quality control procedures listed below.

1. Use of acceptable sample preparation as per the analytical methods specified in Figure 3-6.
2. Calibration of laboratory instruments to within acceptable limits according to EPA or manufacturer's specifications before, after, and during use. Reference standards will be used when necessary.

3. Periodic inspection, maintenance and necessary service of all laboratory instruments and equipment before each use in accordance with the recommended maintenance schedule in Figure 3-7.
4. The use of reference standards and QC samples as necessary to determine the accuracy and precision of procedures, instruments and operators consisting of a minimum of sample blanks, and matrix spikes (where applicable) prior to any sample analysis, and duplicate determinations at least every tenth sample.
5. The use of adequate statistical procedures to monitor the precision and accuracy of the data and to establish acceptable limits including calculation of method detection limits, accuracy of controls, recovery and precision of the method.
6. A continuous review of results to identify and correct problems within the measurement system.
7. Documenting the performance of systems and operators.
8. Regular participation in external laboratory evaluations to determine the accuracy and overall performance of the laboratory. This should include performance evaluation and interlaboratory comparison studies, and formal field unit/laboratory evaluations and inspections.
9. Use of sample identification and, as necessary, formal chain-of-custody procedures in the laboratory.
10. Maintenance and storage of complete records, charts, and logs of all pertinent laboratory calibration, analytical and QC activities and data.
11. Ensuring all data outputs are presented in their prescribed format consisting of not less than laboratory name and EPA ID number, date samples were received, date of analysis, the analyte tested, method name, sample description, test result, units of result, detection limit and precision of the method.

Figure 3-6

Parameters and Test Methods for Hazardous Characteristics and Constituents

| Parameter<br>or Characteristic                         | Test Method<br>(SW-846)                           | Notes                            |
|--|---|----------------------------------|
| Ignitability<br>Flash Point                            | 1010 or 1020                                      | Closed cup or<br>Open            |
| Corrosivity<br>pH                                      | 9040  | Electrometric                    |
| Reactivity<br>Cyanide                                  | 9010 or 9012                                      | Colorimetric,<br>Manual or Auto. |
| Sulfide  | 9030  |                                  |
| EP Toxic Metals  |   |                                  |
| Arsenic  | 1310 and 7060                                     | Extraction/AA<br>Analysis        |
| Barium   | 1310 and 7080                                     | "                                |
| Cadmium  | 1310 and 7130                                     | "                                |
| Chromium   | 1310 and 7190                                     | "                                |
| Lead   | 1310 and 7420                                     | "                                |
| Mercury  | 1310 and 7470                                     | "                                |
| Selenium   | 1310 and 7740                                     | "                                |
| Silver   | 1310 and 7760                                     | "                                |
| Total Organic Halogens                                 | 9020  |                                  |
| Total Organic Carbon                                   | 9060  |                                  |
| Volatile Organics                                      | 8240  | GC/MS                            |
| Semivolatile Organics                                  | 8250  | GC/MS                            |
| Pesticides and PCB's                                   | 8080  | Gas Chrom.                       |
| TCLP (Toxicity Charac-<br>teristic Leaching Procedure) | 40 CFR 268, Appendix I<br>40 CFR 261, Appendix II |                                  |

Note: Inductively Coupled Plasma Atomic Emission Spectroscopy may be substituted for AA metal analysis.

Figure 3-7

Recommended Equipment Performance  
and Maintenance Schedule

| <u>Each Use</u>   | <u>As Needed</u>   |
|---|--|
| <b>A. <u>Atomic Absorption Spectrophotometers</u></b>   |  |
| 1. If burner is to be used, clean slot and install. After use, remove burner and rinse. Rinse spray chamber with distilled water. | 1. Dust and clean.   |
| 2. Check all instrument parameters.   | 2. Request repair of any malfunctioning part.                                    |
| 3. Align lamp for maximum light thru-put at the analytical wavelengths.   | 3. Replace D2 lamps.   |
| 4. Align burner for best sensitivity.   | 4. Clean optics.   |
| 5. Adjust gas flows and nebulizer bead for best sensitivity.  | 5. Replace fuel, oxidant and drain.  |
| 6. Run Standards (calibrate).   | 6. Clean nebulizer.  |
| 7. Run QC samples.  |  |
| <b>B. <u>ICAP</u></b>   |  |
| 1. Check nebulizer aspiration hose.   | 1. Clean ICAP torch monthly.   |
| 2. Aspiration date verification.  | 2. Quarterly or annual maintenance check by manufacturer's representative        |
| 3. Check standard calibration.  |  |
| <b>C. <u>Recorders</u></b>  |  |
| 1. Dust, clean, and repair, as needed.  |  |
| <b>D. <u>Analytical Balances</u></b>  |  |
| 1. Clean after each use.  | 1. Check accuracy with weights monthly, service as needed.                       |
| <b>E. <u>Ovens</u></b>  |  |
| 1. Check Temperature.   |  |
| <b>F. <u>Gas Chromatographs</u></b>   |  |
| 1. Check instrument parameters (flow rates, temperatures, etc.).  | 1. Change gas cylinders, filters, septa, solvent (Hall det.), resin (Hall det.). |
| 2. Calibrate and run QC controls.   |  |

Figure 3-7 (con't.)

Recommended Equipment Performance  
and Maintenance Schedule

| <u>Each Use</u>   | <u>As needed</u>  |
|---|---|
| G. <u>Purge and Trap Systems</u>  |   |
| 1. Check parameters, run standards, QC controls, blanks and samples.    | 1. Replace trap, clean purge vessel.                            |
| H. <u>Liquid Chromatographs</u>   |   |
| 1. Check parameters, purge solvent reservoirs, pump lines and detector. | 1. Inspect for leaks, repair as needed.                         |
| 2. Calibrate, run QC controls, blanks, and samples.                     |   |
| I. <u>Refrigerators/Walk-in Coolers</u>                                 |   |
| 1. Check and record temperature daily.                                  |   |
| J. <u>Deionized/Organic Free Water</u>                                  |   |
| 1. Check conductivity.  | 1. Change ion exchange and organic beds.<br>2. Replace filters. |
| K. <u>Vacuum Pumps</u>  |   |
| 1. Check performance.   | 1. Lubricate, check belts.                                      |
| L. <u>Conductivity Meter</u>  |   |
| 1. Calibrate with standard KCl  | 1. Clean electrode.   |
| M. <u>pH Meter</u>  |   |
| 1. Check electrode.   |   |
| 2. Calibrate.   |   |



### 3.2e Sampling Methods

Samples taken from the drum wastes for identification and characterization are collected using glass disposable composite liquid waste samplers (coliwesas). The coliwesas give a complete cross section of the material in the drum and have been recommended in SW-846 as the correct sampling equipment for drummed liquids. Each glass coliwasa is rinsed between uses and is only used within a particular family of chemicals (chlorinated or non-chlorinated solvents). They are normally discarded after a few uses. The site Environmental Engineer collects the samples from the drums in Building 35.

Samples taken from small laboratory chemical jars are collected using a small trier or spatula. The trier or spatula allow the collection of a sample of dry powders and very viscous materials. Lab chemicals that are in liquid form are sampled using glass pipettes. The pipettes yield a complete cross section of material in the jar. These samples are also taken by the Site Environmental Engineer in Building 35.

To ensure that an adequate number of samples are taken to reflect the variability of the waste during the quarterly and annual samples, a random sampling strategy is employed. The samples are collected from 10% of the containers chosen, at random, and the samples are analyzed either individually or are composited. Quarterly samples are individually analyzed for indicator parameters and composited for VOCs. Annual samples are composited for the entire characterization.

Once a sample is taken, it is placed in an appropriate container and preserved as shown in Figure 3-8. The bottles and jars are packed in an ice chest and cooled and subsequently shipped via overnight delivery to the contract laboratory.

Sample labels as shown in Figure 3-9 and chain of custody records, such as shown in Figure 3-10 accompany all samples as they are taken and shipped. The site engineer fills out the sample label with the applicable information identifying what material the sample was taken from and attaches it to the sample container. The chain of custody form is also filled out by the site

engineer, signed by the transportation company and accompanies the samples to the contract laboratory. Completed chain of custody forms are returned with sample results.

**3.2f Frequency of Analysis**

Samples of the waste solvents will be taken and analyzed on a quarterly basis for general indicator parameters and annually for full scale chemical and physical characterization. Samples of unknowns will be taken on an as needed basis. At a minimum, the samples will be taken before the materials are transferred to Building 35 in order to determine the compatibilities of the materials prior to storage.

**3.2g Additional Requirements for Wastes Generated Off Site**

The waste material generated off site are comparable to the solvent waste generated at the Myrtle Street complex. As such, they will undergo quarterly and annual sampling following the same guidelines as given above. No additional requirements are needed in order to provide periodic waste analysis of the materials. Should any unknowns or new waste be generated at the off site facilities, then the procedures and approach for unknown material characteristics will be employed prior to shipping the material to Myrtle Street.

In order to verify that the wastes shipped from the off site, Miles' facilities correspond to our knowledge of the waste, a manifest and pH check will be done on each drum of waste. In addition, the generating plant will be contacted to verify the origin of the shipment.

**3.2h Additional Requirements of Ignitable, Reactive, or Incompatible Wastes**

The information provided in previous sections of the Waste Analysis Plan is sufficient to characterize the waste generated at Miles in order to store the material. Ignitable materials will have their flash point checked during quarterly analyses or during identification of unknowns. Reactive materials and incompatible lab chemicals will be identified through the compatibility charts and segregated. No additional testing procedures are required.

Figure 3-8

Required Containers, Preservation Techniques,  
and Holding Times for Waste Analysis Samples

| Parameter or<br>Characteristic  | Container(1)                  | Preservation<br>Technique          | Maximum Holding<br>Time |
|---------------------------------|-------------------------------|------------------------------------|-------------------------|
| Ignitability<br>Flash Point     | G, Teflon-<br>lined cap       | Cool, 4 C                          | 28 days                 |
| Corrosivity<br>pH               | G, Teflon-<br>lined cap       | Cool, 4 C                          | Analyze Immediately     |
| Reactivity:<br>Cyanide          | G, Teflon-<br>lined cap       | Cool, 4 C, NaOH<br>to pH>12        | 14 days                 |
| Sulfide                         | G, Teflon-<br>lined cap       | Cool, 4 C, NaOH<br>to pH>9         | 7 days                  |
| EP Toxic Metals:<br>Chromium VI | G, Teflon-<br>lined cap       | Cool, 4 C                          | 24 hours                |
| Mercury                         | G, Teflon-<br>lined cap       | HNO3 to pH<2                       | 28 days                 |
| Barium                          | G, Teflon-<br>lined cap       | HNO3 to pH<2                       | 6 months                |
| Cadium                          | G, Teflon-<br>lined cap       | HNO3 to pH<2                       | 6 months                |
| Lead                            | G, Teflon-<br>lined cap       | HNO3 to pH<2                       | 6 months                |
| Selenium                        | G, Teflon-<br>lined cap       | HNO3 to pH<2                       | 6 months                |
| Silver                          | G, Teflon-<br>lined cap       | HNO3 to pH<2                       | 6 months                |
| Total Organic<br>Halogens       | G, Teflon-<br>lined septum(2) | Cool, 4 C, H2SO4<br>to pH<2        | 7 days                  |
| Total Organic<br>Carbon         | G, Teflon-<br>lined septum(2) | Cool, 4 C, H2SO4<br>or HCl to pH<2 | 28 days                 |
| Volatile Organics               | G, Teflon-<br>lined septum(2) | Cool, 4 C, 0.008%<br>Na2S2O3       | 14 days                 |
| Semivolatile<br>Organics        | G, Teflon-<br>lined septum(2) | Cool, 4 C, 0.008%<br>Na2S2O3       | 14 days                 |

(1) G=glass  
(2) Zero head space allowed

Figure 3-8


Required Containers, Preservation Techniques,  
and Holding Times for Waste Analysis Samples

| Parameter or<br>Characteristic | Container(1)                  | Preservation<br>Technique | Maximum Holding<br>Time |
|--------------------------------|-------------------------------|---------------------------|-------------------------|
| Pesticides and<br>PCBs         | G, Teflon-<br>lined septum(2) | Cool, 4 C                 | 40 days                 |
| TCLP                           | G, Teflon-<br>lined septum(2) | Cool, 4 C                 | 14 days                 |

(1) G=glass

(2) Zero head space allowed

FIGURE 3-9  
SAMPLE LABEL

|   |                               |
|---|-------------------------------|
|  | Chain-of-Custody Number _____ |
| Sample Type: _____  |                               |
| Plant: _____  |                               |
| Sample Location: _____  |                               |
| Sampler: _____  |                               |
| Date: _____   | Time: _____                   |
| Comments: _____   |                               |
| Preservative: _____   |                               |

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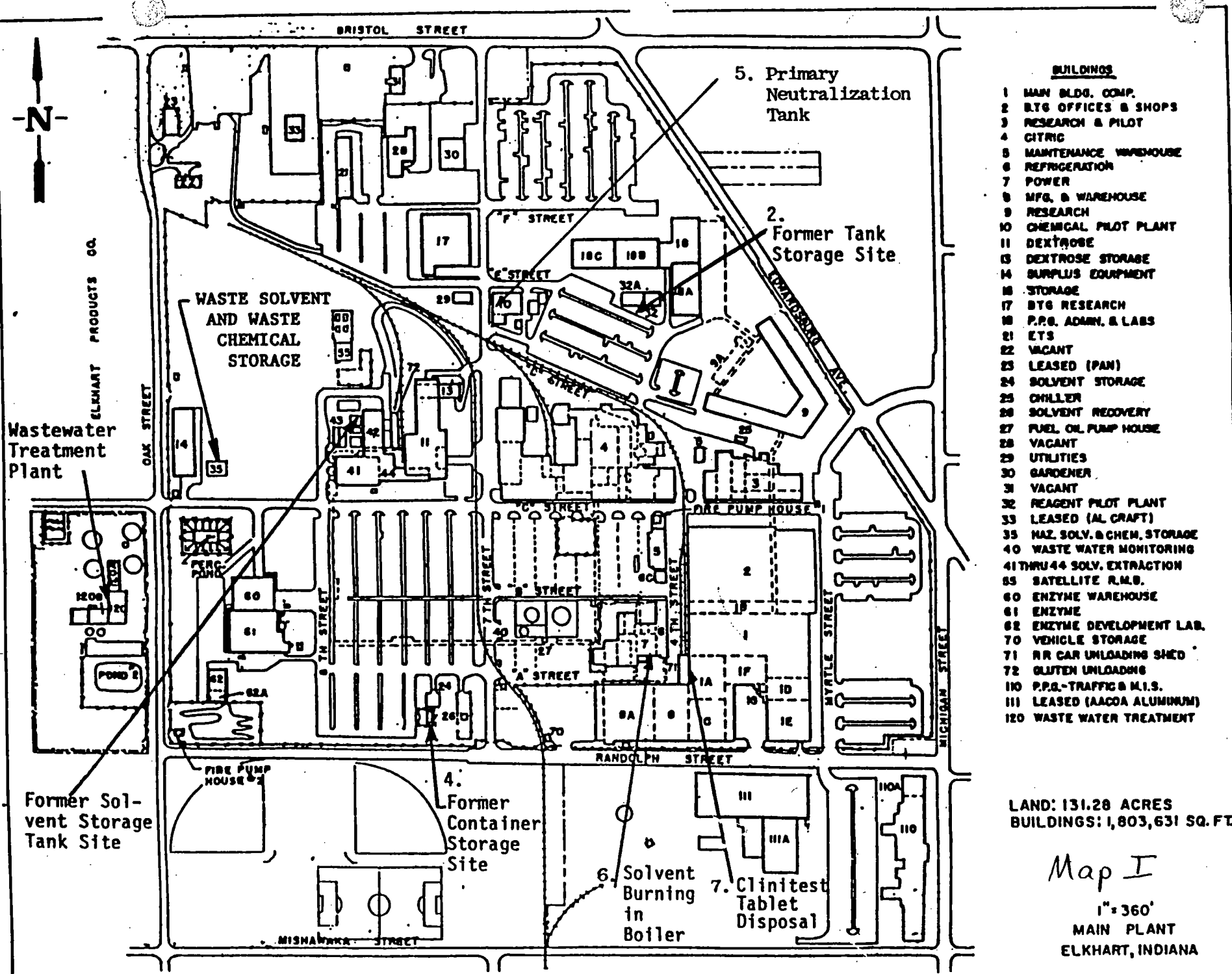
FIG 3-10  
CHAIN-OF-CUSTODY RECORD

NO. 0117

[illegible]

SECTION 3-35 ISSUED 10/22/90

FIGURE 10-1 SOLID WASTE MANAGEMENT UNITS



SECTION 10-2  
ISSUED 10/22/90

### 3. WASTE CHARACTERISTICS

#### 3.1a Chemical and Physical Analyses

Miles generates three primary categories of hazardous wastes. These are classified as:

- (1) Chlorinated wastes containing predominantly solvents such as methylene chloride, chloroform, acetone and butyl acetate,
- (2) non-chlorinated wastes containing predominantly solvents such as acetone, toluene, methanol, ethanol and cyclohexanone, and
- (3) laboratory wastes containing small amounts of relatively pure materials common to a research and development lab.

The first two categories should be considered as general waste divisions rather than strict separations of chlorinated and non-chlorinated materials. Due to the laboratory operations generating the waste each waste stream will have materials in it which are also in the other waste category. These separations are made more to ease our ability to dispose of the waste rather than segregate the materials into two compatibility groups. (Disposal facilities have limits on the halogen content of the wastes they accept for incineration).

All of these wastes are generated due to the research and development activities on-going at Miles' Elkhart facility. Only small amounts of hazardous wastes are generated by the production operations at the Myrtle Street Plant. Information about each of these waste streams is given below.

#### Chlorinated Wastes:

These wastes are water miscible, and are comprised of one or two layers. The liquids can be a variety of colors from blue to yellow to colorless. Odors are essentially solvent sweet and mild. Most of the time, the wastes are partially water, yielding a specific gravity slightly above 1.0. Suspended solids are very low. The pH of the waste is between 5 and 9, per the Miles' Standard Laboratory Solvent Scrap Procedure. A summary of materials which are in the waste and the waste characteristics are listed in Figure 3-1.



CHLORINATED WASTE SOLVENT  
COMPONENTS AND CHARACTERISTICS  
Figure 3-1

| <u>Components</u>     | <u>Ranges by Percent Volume</u> |
|-----------------------|---------------------------------|
| Water                 | 0-55                            |
| Acetone               | 0-12                            |
| Butyl Acetate         | 0-25                            |
| Carbon Tetrachloride  | 0-4                             |
| Chloroform            | 0-85                            |
| 1,2 Dichloroethane    | 0-8                             |
| Ethanol               | 0-12                            |
| Isopropyl Alcohol     | 0-4                             |
| Methanol              | 0-5                             |
| Methylene Chloride    | 0-15                            |
| 1,1,1-Trichloroethane | 0-8                             |
| Toluene               | 0-5                             |
| Xylene                | 0-5                             |

| <u>Components</u> | <u>Range</u>  |         |
|-------------------|---------------|---------|
| Arsenic           | 0-2           | ppm     |
| Barium            | 0-40          | ppm     |
| Cadmium           | 0-1           | ppm     |
| Chromium          | 0-3           | ppm     |
| Copper            | 0-25          | ppm     |
| Lead              | 0-10          | ppm     |
| Mercury           | 0-5           | ppm     |
| Nickel            | 0-8           | ppm     |
| Selenium          | 0-1           | ppm     |
| Silver            | 0-3           | ppm     |
| Thallium          | 0-2           | ppm     |
| Zinc              | 0-4           | ppm     |
| pH                | 5-9           |         |
| Specific Gravity  | 1.1 - 1.4     | g/ml    |
| Cyanide           | 0-2           | mg/kg   |
| Sulfide           | 0-10          | mg/kg   |
| Ash Content       | 1-2           | %       |
| TSS               | **            |         |
| Flashpoint        | 10-100        | C       |
| TOX               | 15-75         | %Cl     |
| BTU               | 3,500 - 6,000 | per lb. |

\*\* Due to sample matrix, analysis not performed.

The chlorinated wastes, which Miles generates, are considered listed wastes from non-specific sources with waste codes of F001 and F002. They are listed on the basis of their toxicity. Miles has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

- a. Degreasing solvents from maintenance/shop activities such as 1,1,1-trichloroethane, and
- b. solvents from lab activities such as methylene chloride.

There are also instances in which an alcohol, such as methanol or ethanol, is present in the waste. In those instances, the waste is also classified as DOT flammable and EPA ignitable (D001) with a flash point of less than 100°F.

Other characteristic waste codes which are applicable to this waste stream include the following:

|                      |      |
|----------------------|------|
| Arsenic              | D004 |
| Lead                 | D008 |
| Mercury              | D009 |
| Benzene              | D018 |
| Carbon Tetrachloride | D019 |
| Chloroform           | D022 |
| 1,2-Dichloroethane   | D028 |

Miles has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste and laboratory analyses for the wastes. Laboratory reports for representative samples of the chlorinated waste are given in Appendix D.

The locations where the wastes are generated are shown in Figure 3-2. These are the forms used by the operators when picking up the waste.

#### Non-Chlorinated Wastes:

These wastes are water soluble, and are comprised of one or two layers. Colors range from off-blue to green to colorless. Odors are mild solvent sweet. Wastes are mostly water with a low suspended solids content. The flash point of the material is usually less than 100°F with a pH of between 5 and 9. Summarized physical and chemical characteristics of the waste are given in Figure 3-3.

FIGURE 3-2

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 1-1D-1F-2-8-8A**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                           | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION               |               |       |
|--|-------|------------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|---------------------------|---------------|-------|
|  |       |                                    |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/N-CHLOR | LAB PACK AREA | OTHER |
| 1  | 2nd   | Col. 55 Solv. Cabinet              | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 2nd   | Vit. Packg. (Col. 210) (Will Call) | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 2nd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.76 1 - 5 gal                   | 2 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.78 Sink                        | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.80* 1 - 2 gal                  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.154 Inside Door 1.3.57         | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1D   | 3rd   | 1D.3.61                            | 3 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.18 1 - 5 gal                  | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.34 1 - 2 gal                  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.37                            | 5 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.44                            | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.48                            | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 2  | 1st   | Paint Shop                         | 5 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 2  | 1st   | Electric Shop                      | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8  | 3rd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8  | 3rd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8A   | 4th   | 8A.4.189 Film Coating (Will Call)  | 1 - 55 gal         |         |    |                             |               |       |                           |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                    |                    |         |    |                             |               |       |                           |               |       |

\*WILL CALL FOR 2 GALLON

- Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
- If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

SIGNED \_\_\_\_\_

DATE \_\_\_\_\_

—SEE REVERSE SIDE FOR INSTRUCTIONS—

Form 3.472A Pg. 1 of 4 (R10-90)

SECTION 3-4  
ISSUED 10/22/90

FIGURE 3-2 (con't.)

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 3—3J—3K—4—10—44—120**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION   | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION               |               |       |
|--|-------|--|--------------------|---------|----|-----------------------------|---------------|-------|---------------------------|---------------|-------|
|  |       |  |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/N-CHLOR | LAB PACK AREA | OTHER |
| 3  | 1st   | 3.1.28   | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 1st   | 3.1.30 Corner 3.1.30 & 3.1.22                    | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 1st   | 3.1 Hallway to Pilot Plant                       | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 1st   | 3.1.99   | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 2nd   | 3.2.28 North East Corner                         | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 2nd   | FH - 52  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3  | 2nd   | 3.2.36   | 2 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 3J   | 2nd   | Outside Rm. 50-55 (Fume Hood FH-27)              | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3K   | 1st   | 3K.1 FH. 3177 (Across From)                      | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 3K   | 2nd   | FH - 42  | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 4  | 1st   | Citric Plant & Coating Shed (Will Call)          | 4 - 55 gal         |         |    |                             |               |       |                           |               |       |
| 4  | 2nd   | Citric Lab (Will Call)                           | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 10   |       | Pilot Plant                                      | 55 gal             |         |    |                             |               |       |                           |               |       |
| 44   | 1st   | Extraction 44.1.4                      3 - 5 gal | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 44   | 1st   | Extraction 44.1.24                               | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 120  |       | Wastewater Treatment Plant (Will Call)           | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 120  |       |  | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
|  |       |  |                    |         |    |                             |               |       |                           |               |       |
|  |       |  |                    |         |    |                             |               |       |                           |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |  |                    |         |    |                             |               |       |                           |               |       |

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

Form 3.472A Pg. 2 of 4 (R10-90)

SECTION 3-5  
ISSUED 10/22/90

FIGURE 3-2 (con't.)

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 9 and 17**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                          | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION                |               |       |
|--|-------|-----------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|----------------------------|---------------|-------|
|  |       |                                   |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/NONCHLOR | LAB PACK AREA | OTHER |
| 9  | Bsmt  | Garage-Maintenance Cage NW Corner | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W1 Basement Room 110            | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 1st   | 9.W1 1st Bay Inside Wall          | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 1st   | 9.W2 Bay 3 Under North Sink       | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1202A                   | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 1st Bay North Wall           | 4 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 2nd Bay North Wall           | 4 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 4th Bay Center               | 3 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1204 Bay 3 South Wall   | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1217 - Animal Room      | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W2 Room 214A                    | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W2 - Room B10                   | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W2 Bay 3 South Wall 1 - 2 gal   | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.24 Lab #2                    | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.47 Lab #6                    | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.60 Lab #4 1 - 2 gal          | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.63 Lab #9                    | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                   |                    |         |    |                             |               |       |                            |               |       |

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 18—18A—18B—18C—32**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                          | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION                 |               |       |
|--|-------|-----------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|-----------------------------|---------------|-------|
|  |       |                                   |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/NON-CHLOR | LAB PACK AREA | OTHER |
| 18   | Bsmt  | 18.B.12 By Inside Door            | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18   | Bsmt  | 18.B.24 By Inside Door            | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.6 Under Fume Hood 1 - 2 gal  | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.8 Under Sink 1 - 2 gal       | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.23 Under Sink 1 - 2 gal      | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.26 Under Cabinet             | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18   | 1st   | 18.1.109 Solvent Room             | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18A  | Bsmt  | 18A.B.11.FH30 (Will Call)         | 2 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18A  | Bsmt  | 18A.B.22                          | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | Bsmt  | 18B.B.B02 Across from Hood B02B   | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | Bsmt  | 18B.B.B02 North wall of Hood B02C | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | 2nd   | 18B.2.B205 Hood B205 1 - 5 gal    | 2 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | 2nd   | 18B.2.B219                        | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18B  | 2nd   | 18B.2.B220 Hood B220C             | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | Bsmt  | 18C.B.C05 Hood C05                | 2 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | Bsmt  | 18C.B.C09 Hood C09                | 2 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C103 hood C103 1 - 5 gal    | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C107 Hood C107              | 2 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C114                        | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 1st   | 18C.1.C115                        | 1 - 2 gal          |         |    |                             |               |       |                             |               |       |
| 18C  | 2nd   | 18C.2.208                         | 2 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 32   | 1st   | 32.2-3 Under Sink (Will Call)     | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| 32   | 1st   | 32.1-4 Under Sink (Will Call)     | 1 - 5 gal          |         |    |                             |               |       |                             |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                   |                    |         |    |                             |               |       |                             |               |       |

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

NON-CHLORINATED WASTE SOLVENT  
COMPONENTS AND CHARACTERISTICS  
Figure 3-3

| <u>Components</u>  | <u>Ranges by Percent Volume</u> |
|--------------------|---------------------------------|
| Water              | 10-75                           |
| Acetone            | 0-5                             |
| Butyl Acetate      | 0-5                             |
| Chloroform         | 0-10                            |
| Cyclohexanone      | 0-15                            |
| Ethanol            | 0-5                             |
| Ethyl Benzene      | 0-5                             |
| Ethyl Cellulose    | 0-5                             |
| Ethyl Ether        | 0-5                             |
| Isopropyl Alcohol  | 0-5                             |
| Methanol           | 0-15                            |
| Methylene Chloride | 0-7                             |
| Propanol           | 0-5                             |
| Toluene            | 0-26                            |
| Xylene             | 0-5                             |

| <u>Components</u> | <u>Range</u>  |         |
|-------------------|---------------|---------|
| Arsenic           | 0-2           | ppm     |
| Barium            | 0-40          | ppm     |
| Cadmium           | 0-1           | ppm     |
| Chromium          | 0-2           | ppm     |
| Copper            | 0-25          | ppm     |
| Lead              | 0-15          | ppm     |
| Mercury           | 0-1           | ppm     |
| Nickel            | 0-10          | ppm     |
| Selenium          | 0-1           | ppm     |
| Silver            | 0-4           | ppm     |
| Thallium          | 0-2           | ppm     |
| Zinc              | 0-10          | ppm     |
| pH                | 5-9           |         |
| Specific Gravity  | 0.8 - 1.1     | g/ml    |
| Cyanide           | 0-2           | mg/kg   |
| Sulfide           | 0-10          | mg/kg   |
| Ash Content       | 0-1           | %       |
| TSS               | 100-500       | mg/l    |
| Flashpoint        | 10-100        | C       |
| TOX               | 0-15          | %Cl     |
| BTU               | 2,500 - 7,500 | per lb. |

The wastes that are termed non-halogenated are classified as listed hazardous wastes with waste codes of F003 and F005. They are listed on the basis of their ignitability and toxicity. Miles has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

- a. Laboratory and Extraction solvents containing xylene, acetone, ethyl benzene, methyl isobutyl ketone, cyclohexanone, and methanol, and
- b. laboratory and extraction solvents containing toluene.

In most instances, there is also an alcohol, such as methanol or ethanol in the waste adding to the flammability of the mixture. In these cases the waste is also classified as DOT flammable and EPA ignitable (D001) due to a flash point of less than 100°F.

Other characteristic waste codes applicable to this waste include the following:

|                      |      |
|----------------------|------|
| Arsenic              | D004 |
| Lead                 | D008 |
| Mercury              | D009 |
| Benzene              | D018 |
| Carbon Tetrachloride | D019 |
| Chloroform           | D022 |
| Methyl Ethyl Ketone  | D035 |

Miles has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste, the materials used, and the laboratory analyses for the wastes. Laboratory reports for representative samples of the non-chlorinated waste are given in Appendix D.

The locations where the wastes are picked up are also shown in Figure 3-2.

#### Miscellaneous Laboratory Chemicals:

Through the day-to-day operations of the research and development laboratories, a variety of spent miscellaneous lab chemicals are generated. The materials can be in solid, liquid, or gas form and can have a variety of characteristics. Many of



the wastes are listed as toxic or acutely toxic, others are listed only on the basis of their characteristics. Figure 3-4 is a compilation of the materials that could be seen in the storage facility at Building 35. Included in the figure is the listing of the P and U waste codes for the materials and some characteristic waste codes.

These wastes are segregated when they are scheduled for pick up from their generating location on the basis of their compatibility. Information as to their characteristics and properties are obtained from the following publications:

Chemical Dictionary  
Merck Index  
SAX Handbook of Hazardous Industrial  
Chemicals

This information is used with the compatibility chart shown in Appendix E to determine proper segregation.

### 3.1b Containerized Waste

The solvent waste produced at Miles is collected in 5-gallon containers and transferred to 55-gallon drums at Building 35. Virtually all of the wastes, except for a few of the dry laboratory chemicals, contain free liquids. The drums, stored in Building 35, are in a diked, enclosed area that provides secondary containment. There are no other hazardous waste storage areas at the Myrtle Street plant. No wastes are stored without secondary containment; therefore, no testing for free liquids will be performed.

Section 4 provides information on the storage facility and shows the containment system for the building.

FIGURE 3-4

LIST OF WASTE CHEMICALS

| CHEMICAL              | EPA ID# |
|-----------------------|---------|
| Acetaldehyde          | U001    |
| Acetone               | U002    |
| Acetonitrile          | U003    |
| Acetophenone          | U004    |
| Acetyl chloride       | U006    |
| Acrolein              | P003    |
| Acrylamide            | U007    |
| Acrylic Acid          | U008    |
| Acrylonitrile         | U009    |
| Allyl alcohol         | P005    |
| Allyl bromide         | D001    |
| Allyl chloride        | D001    |
| Aluminum chloride     | D002    |
| Aminopyridine         | P008    |
| Ammonium hydroxide    | D002    |
| Ammonium picrate      | P009    |
| Ammonium persulfate   | D001    |
| Ammonium thiocyanate  | P030    |
| Amyl acetate          | D001    |
| Amyl alcohol          | D001    |
| Aniline               | U012    |
| Arsenic acid          | P010    |
| Arsenic oxide         | P012    |
| Arsenic pentoxide     | P011    |
| Aziridine             | P054    |
| Barium acetate        | D005    |
| Barium chloride       | D005    |
| Barium hydroxide      | D005    |
| Barium oxide          | D005    |
| Benzene               | U019    |
| Benzene, 1,2-dichloro | U070    |
| Benzene, 1,3-dichloro | U071    |
| Benzene, 1,4-dichloro | U072    |
| Benzenesulfonic acid  | D002    |
| Benzidine             | U021    |
| p-Benzoquinone        | U197    |
| Benzyl chloride       | P028    |
| Boric acid            | D002    |
| Boron trichloride     | D002    |
| Bromoacetaldehyde     | D001    |
| Brucine               | P018    |
| Butanedione monoxime  | D001    |
| Butyl alcohol         | U031    |
| Butyl methacrylate    | D001    |
| Cacodylic acid        | U136    |
| Cadmium chloride      | D006    |
| Calcium chromate      | U032    |
| Calcium nitrate       | D001    |
| Carbon disulfide      | P022    |
| Carbon tetrachloride  | U211    |

## LIST OF WASTE CHEMICALS

| CHEMICAL                             | EPA ID#    |
|--------------------------------------|------------|
| Carbonyl iron powder                 | D001       |
| Ceric Sulfate                        | D001       |
| Chloroacetyl chloride                | D002       |
| p-Chloroaniline                      | P024       |
| Chlorobenzene                        | U037       |
| Chlorobenzoyl chloride               | D002       |
| Chloroform                           | U044       |
| Chlorophenol                         | U048       |
| Chloropropionaldehyde diethyl acetal | D001       |
| Chlorosuccinimide                    | D002       |
| Chromic acid, and salts              | D002, D007 |
| Chromic sulfate                      | D007       |
| Chrysene                             | U050       |
| Copper Cyanide                       | P029       |
| Cresol                               | U052       |
| Crotonyl chloride                    | D001       |
| Cumene                               | U055       |
| Cyanogen bromide                     | U246       |
| Cyanuric chloride                    | P030       |
| Cyclohexane                          | U056       |
| Cyclohexanone                        | U057       |
| Dibutyl phthalate                    | U069       |
| Dichloroacetic acid                  | D002       |
| Dichlorobenzoyl chloride             | D002       |
| 2,4-Dichlorophenol                   | U081       |
| 2,6-Dichlorophenol                   | U082       |
| 1,3-Dichloropropene                  | U084       |
| Diethylamine                         | D001       |
| Diethyl phthalate                    | U088       |
| Difluorophosphoric acid              | D002       |
| Dihydropyran                         | D001       |
| Diisobutyl aluminum hydride          | D001       |
| Dimethoxypropane                     | D001       |
| Dimethylamine                        | U092       |
| Dimethylcarbamyl chloride            | U097       |
| Dimethyldichlorosilane               | D001       |
| Dimethylformamide                    | D001       |
| alpha, alpha-Dimethyl phenethylamine | P046       |
| Dimethyl phthalate                   | U102       |
| 2,4-Dinitrophenol                    | P048       |
| 2,4 Dinitrotoluene                   | U105       |
| 2,6-Dinitrotoluene                   | U106       |
| Diethyl phthalate                    | U107       |
| 1,4-Dioxane                          | U108       |
| Epichlorohydrin                      | U041       |
| Ethane, 1,1-dichloro                 | U076       |
| Ethane, 1,2-dichloro                 | U077       |
| Ethane, 1,1,1-trichloro              | U226       |
| Ethanal                              | U001       |
| Ethanolamine                         | D002       |

## LIST OF WASTE CHEMICALS

| CHEMICAL                         | EPA ID#    |
|----------------------------------|------------|
| Ethyl acetate                    | U112       |
| Ethyl alcohol                    | D001       |
| Ethyl bromoacetate               | D002       |
| Ethyl chloride                   | D001       |
| Ethyl chloroformate              | D001       |
| Ethylene dibromide               | U067       |
| Ethylene dichloride              | U077       |
| Ethylene glycol monobutyl ether  | D001       |
| Ethylene glycol monomethyl ether | D001       |
| Ethylenimine                     | P054       |
| Ethyl carbamate                  | U238       |
| Ethyl ether                      | U117       |
| Ethyl formate                    | D001       |
| Ethyl methane sulfonate          | U119       |
| Ferric chloride                  | D002       |
| Fluoboric acid                   | D002       |
| Formaldehyde                     | U122       |
| Formic acid                      | U123       |
| Furan                            | U124       |
| Furfural                         | U125       |
| Gloxylic acid                    | D002       |
| Heptaldehyde                     | D001       |
| Hexane                           | D001       |
| Hexanoic acid                    | D002       |
| Hydrazine                        | U133       |
| Hydrochloric acid                | D002       |
| Hydrogen fluoride                | U134       |
| Hydrogen sulfide                 | U135       |
| Hydroxylamine hydrochloride      | D002       |
| Isobutyl chloroformate           | D001, D002 |
| Lead acetate                     | U144       |
| Lead dioxide                     | D001       |
| Lithium aluminum hydride         | D001, D003 |
| Lithium perchlorate              | D001       |
| Magnesium nitrate                | D001       |
| Manganese dioxide                | D001       |
| Maleic anhydride                 | U147       |
| Malononitrile                    | U149       |
| Mercuric oxide                   | D009       |
| Mercuric sulfide                 | D009       |
| Mercury                          | U151       |
| Methacrylic acid                 | D002       |
| Methanesulfonyl chloride         | D002       |
| Methanol                         | U154       |
| Methylal                         | D001       |
| Methylene chloride               | U080       |
| Methyl ethyl ketone              | U159       |
| Methyl hydrazine                 | P068       |
| Methyl iodide                    | U138       |
| Methyl isobutyl ketone           | U161       |

## LIST OF WASTE CHEMICALS

| CHEMICAL   | EPA ID#             |
|--|---------------------|
| Methyl methacrylate  | D001, D003          |
| Methylstyrene  | D001                |
| Methyl vinyl ketone  | D001                |
| Naphthalene  | U165                |
| 1-Naphthalenamine  | U167                |
| 1,4-Naphthoquinone   | U166                |
| Nicotine   | P075                |
| Nitric acid  | D002                |
| Nitroaniline   | P077                |
| Nitrobenzene   | U169                |
| Nitromethane   | - D001              |
| p-Nitrophenol  | U170                |
| Oleum  | D002                |
| Osmium tetroxide   | P087                |
| Oxirane  | U115                |
| Paraldehyde  | U182                |
| Pentyne  | D001                |
| Perchloric Acid  | D001                |
| Periodic Acid  | D001                |
| Phenacetin   | U187                |
| Phenol   | U188                |
| Phosgene   | P095                |
| Phosphoric acid  | D002                |
| Phosphorus oxychloride   | D002                |
| Phosphorus pentoxide   | D001, D002, D003    |
| Phosphorus trichloride   | D002, D003          |
| Phosphotungstic acid   | D001, D002          |
| Phthalic anhydride   | U190                |
| Potassium tert-butyrate  | D001, D003          |
| Potassium cyanide  | P098                |
| Potassium dichromate   | D001                |
| Potassium dichromate, sulfuric acid,<br>mercuric sulfate, silver sulfate | D002, D009,<br>D011 |
| Potassium fluoride   | D002                |
| Potassium hydroxide  | D002                |
| Potassium metal  | D001, D003          |
| Potassium nitrate  | D001                |
| Potassium nitrite  | D001                |
| Potassium permanganate   | D001                |
| Potassium thiocyanate  | U030                |
| Propane, 1,2-dichloro  | U083                |
| Propylene glycol   | D001                |
| Pyridine   | U196                |
| Resorcinol   | U201                |
| Saccharin  | U202                |
| Silver nitrate   | D001                |
| Sodium amalgam   | D001, D003, D009    |
| Sodium arsenite  | D004                |
| Sodium azide   | P105                |
| Sodium bisulfate   | D002                |

## LIST OF WASTE CHEMICALS

| CHEMICAL                  | EPA ID#   |
|---------------------------|-----------|
| Sodium borohydride        | D001,D003 |
| Sodium chlorate           | D001      |
| Sodium cyanide            | P106      |
| Sodium cyanoamide         | P030      |
| Sodium hydroxide          | D002      |
| Sodium metal              | D001,D003 |
| Sodium methyrate          | D001      |
| Sodium nitrate            | D001      |
| Sodium nitrite            | D001      |
| Sodium perborate          | D001      |
| Sodium perchlorate        | D001      |
| Sodium periodate          | D001      |
| Sodium trichlorophenate   | D002      |
| Strontium peroxide        | D001      |
| Sulfanilic acid           | D002      |
| Sulfuric acid             | D002      |
| 1,1,1,2-Tetrachloroethane | U208      |
| 1,1,2,2-Tetrachloroethane | U209      |
| Tetrahydrofuran           | U213      |
| Tetramethylsilane         | D001      |
| Thiourea                  | U219      |
| Titanium tetrachloride    | D002      |
| Titanium trichloride      | D001      |
| Toluene                   | U220      |
| Toluenediamine            | U221      |
| Toluenesulfonic acid      | D002      |
| Trichloroacetic acid      | D002      |
| Trichloroethylene         | U228      |
| Triethylamine             | D001      |
| Vinyl chloride            | U043      |
| Xylene                    | U239      |
| Zinc chloride             | D002      |
| Zinc nitrate              | D001      |

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**ATTACHMENT I**  
**WASTE ANALYSIS PLAN**

**MILES INC.**  
**ELKHART, INDIANA**  
**IND005068705**

### 3. WASTE CHARACTERISTICS

#### 3.1a Chemical and Physical Analyses

- Miles generates three primary categories of hazardous wastes. These are classified as:
- (1) Chlorinated wastes containing predominantly solvents such as methylene chloride, chloroform, acetone and butyl acetate,
  - (2) non-chlorinated wastes containing predominantly solvents such as acetone, toluene, methanol, ethanol and cyclohexanone, and
  - (3) laboratory wastes containing small amounts of relatively pure materials common to a research and development lab.

The first two categories should be considered as general waste divisions rather than strict separations of chlorinated and non-chlorinated materials. Due to the laboratory operations generating the waste each waste stream will have materials in it which are also in the other waste category. These separations are made more to ease our ability to dispose of the waste rather than segregate the materials into two compatibility groups. (Disposal facilities have limits on the halogen content of the wastes they accept for incineration).

All of these wastes are generated due to the research and development activities on-going at Miles' Elkhart facility. Only small amounts of hazardous wastes are generated by the production operations at the Myrtle Street Plant. Information about each of these waste streams is given below.

#### Chlorinated Wastes:

These wastes are water miscible, and are comprised of one or two layers. The liquids can be a variety of colors from blue to yellow to colorless. Odors are essentially solvent sweet and mild. Most of the time, the wastes are partially water, yielding a specific gravity slightly above 1.0. Suspended solids are very low. The pH of the waste is between 5 and 9, per the Miles' Standard Laboratory Solvent Scrap Procedure. A summary of materials which are in the waste and the waste characteristics are listed in Figure 3-1.



**CHLORINATED WASTE SOLVENT**  
**COMPONENTS AND CHARACTERISTICS**  
Figure 3-1

---

| <u>Components</u>     | <u>Ranges by Percent Volume</u> |
|-----------------------|---------------------------------|
| Water                 | 0-55                            |
| Acetone               | 0-3                             |
| Butyl Acetate         | 0-25                            |
| Carbon Tetrachloride  | 0-2                             |
| Chloroform            | 0-85                            |
| 1,2 Dichloroethane    | 0-8                             |
| Ethanol               | 0-12                            |
| Isopropyl Alcohol     | 0-4                             |
| Methanol              | 0-5                             |
| Methylene Chloride    | 0-10                            |
| 1,1,1-Trichloroethane | 0-6                             |
| Toluene               | 0-5                             |
| Xylene                | 0-5                             |

---

| <u>Components</u> | <u>Range</u>  |         |
|-------------------|---------------|---------|
| Arsenic           | 0-2           | ppm     |
| Barium            | 0-40          | ppm     |
| Cadmium           | 0-1           | ppm     |
| Chromium          | 0-2           | ppm     |
| Copper            | 0-25          | ppm     |
| Lead              | 0-10          | ppm     |
| Mercury           | 0-5           | ppm     |
| Nickel            | 0-8           | ppm     |
| Selenium          | 0-1           | ppm     |
| Silver            | 0-3           | ppm     |
| Thallium          | 0-2           | ppm     |
| Zinc              | 0-4           | ppm     |
| pH                | 5-9           |         |
| Specific Gravity  | 1.1 -1.4      | g/ml    |
| Cyanide           | 0-2           | mg/kg   |
| Sulfide           | 0-10          | mg/kg   |
| Ash Content       | 1-2           | %       |
| TSS               | **            |         |
| Flashpoint        | 10-100        | C       |
| TOX               | 15-75         | %Cl     |
| BTU               | 3,500 - 6,000 | per lb. |

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\*\* Due to sample matrix, analysis not performed.

The chlorinated wastes, which Miles generates, are considered listed wastes from non-specific sources with waste codes of F001 and F002. They are listed on the basis of their toxicity. Miles has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

- a. Degreasing solvents from maintenance/shop activities such as 1,1,1-trichloroethane, and
- b. solvents from lab activities such as methylene chloride.

There are also instances in which an alcohol, such as methanol or ethanol, is present in the waste. In those instances, the waste is also classified as DOT flammable and EPA ignitable (D001) with a flash point of less than 100°F.

Other characteristic waste codes which are applicable to this waste stream include the following:

|                      |      |
|----------------------|------|
| Arsenic              | D004 |
| Lead                 | D008 |
| Mercury              | D009 |
| Benzene              | D018 |
| Carbon Tetrachloride | D019 |
| Chloroform           | D022 |
| 1,2-Dichloroethane   | D028 |

Miles has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste and laboratory analyses for the wastes. Laboratory reports for representative samples of the chlorinated waste are given in Appendix I-1.

The locations where the wastes are generated are shown in Figure 3-2. These are the forms used by the operators when picking up the waste.

#### Non-Chlorinated Wastes:

These wastes are water soluble, and are comprised of one or two layers. Colors range from off-blue to green to colorless. Odors are mild solvent sweet. Wastes are mostly water with a low suspended solids content. The flash point of the material is usually less than 100°F with a pH of between 5 and 9. Summarized physical and chemical characteristics of the waste are given in Figure 3-3.

FIGURE 3-2

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 1-1D-1F-2-8-8A**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                           | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION               |               |       |
|--|-------|------------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|---------------------------|---------------|-------|
|  |       |                                    |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/N-CHLOR | LAB PACK AREA | OTHER |
| 1  | 2nd   | Col. 55 Solv. Cabinet              | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 2nd   | Vit. Packg. (Col. 210) (Will Call) | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 2nd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.78 1 - 5 gal                   | 2 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.78 Sink                        | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.80* 1 - 2 gal                  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1  | 3rd   | 1.3.154 Inside Door 1.3.57         | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1D   | 3rd   | 1D.3.61                            | 3 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.18 1 - 5 gal                  | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.34 1 - 2 gal                  | 1 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.37                            | 5 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.44                            | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 1F   | 4th   | 1F.4.48                            | 2 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 2  | 1st   | Paint Shop                         | 5 - 5 gal          |         |    |                             |               |       |                           |               |       |
| 2  | 1st   | Electric Shop                      | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8  | 3rd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8  | 3rd   | Alka-Lab                           | 1 - 2 gal          |         |    |                             |               |       |                           |               |       |
| 8A   | 4th   | 8A.4.189 Film Coating (Will Call)  | 1 - 55 gal         |         |    |                             |               |       |                           |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                    |                    |         |    |                             |               |       |                           |               |       |

\*WILL CALL FOR 2 GALLON

- Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
- If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

SIGNED \_\_\_\_\_

DATE \_\_\_\_\_

—SEE REVERSE SIDE FOR INSTRUCTIONS—

FIGURE 3-2 (con't.)

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 3-3J-3K-4-10-44-120**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION   | NORMAL QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |           |       | DISPOSITION               |               |       |
|--|-------|--|-----------------|---------|----|-----------------------------|-----------|-------|---------------------------|---------------|-------|
|  |       |  |                 | AREA    | pH | CHLOR.                      | NON-CHLOR | OTHER | DRUM NO.<br>CHLORIN-CHLOR | LAB PACK AREA | OTHER |
| 3  | 1st   | 3.1.28   | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3  | 1st   | 3.1.30 Corner 3.1.30 & 3.1.22                    | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3  | 1st   | 3.1 Hallway to Pilot Plant                       | 1 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3  | 1st   | 3.1.90   | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3  | 2nd   | 3.2.28 North East Corner                         | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3  | 2nd   | FH - 52  | 1 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3  | 2nd   | 3.2.36   | 2 - 2 gal       |         |    |                             |           |       |                           |               |       |
| 3J   | 2nd   | Outside Rm. 50-55 (Fume Hood FH-27)              | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3K   | 1st   | 3K.1 FH. 3177 (Across From)                      | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 3K   | 2nd   | FH - 42  | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 4  | 1st   | Citric Plant & Coaling Shed (Will Call)          | 4 - 55 gal      |         |    |                             |           |       |                           |               |       |
| 4  | 2nd   | Citric Lab (Will Call)                           | 1 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 10   |       | Pilot Plant                                      | 55 gal          |         |    |                             |           |       |                           |               |       |
| 44   | 1st   | Extraction 44.1.4                      3 - 5 gal | 1 - 2 gal       |         |    |                             |           |       |                           |               |       |
| 44   | 1st   | Extraction 44.1.24                               | 2 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 120  |       | Wastewater Treatment Plant (Will Call)           | 1 - 5 gal       |         |    |                             |           |       |                           |               |       |
| 120  |       |  | 1 - 2 gal       |         |    |                             |           |       |                           |               |       |
|  |       |  |                 |         |    |                             |           |       |                           |               |       |
|  |       |  |                 |         |    |                             |           |       |                           |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |  |                 |         |    |                             |           |       |                           |               |       |

Attachment 1  
 page 6  
 LHM 000066705

- 1 Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
- 2 If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

FIGURE 3-2 (con't.)

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 9 and 17**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                          | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION                |               |       |
|--|-------|-----------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|----------------------------|---------------|-------|
|  |       |                                   |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLOR/NONCHLOR | LAB PACK AREA | OTHER |
| 9  | Bsmt  | Garage-Maintenance Cage NW Corner | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W1 Basement Room 110            | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 1st   | 9.W1 1st Bay Inside Wall          | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 1st   | 9.W2 Bay 3 Under North Sink       | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1202A                   | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 1st Bay North Wall           | 4 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 2nd Bay North Wall           | 4 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 4th Bay Center               | 3 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1204 Bay 3 South Wall   | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W1 Room 1217 - Animal Room      | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W2 Room 214A                    | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 9  | Bsmt  | 9.W2 - Room B10                   | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 9  | 2nd   | 9.W2 Bay 3 South Wall 1 - 2 gal   | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.24 Lab #2                    | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.47 Lab #6                    | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.60 Lab #4 1 - 2 gal          | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 17   |       | 17.1.63 Lab #9                    | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                   |                    |         |    |                             |               |       |                            |               |       |

Attachment 1  
 page 7  
 IND 005268705

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

FIGURE 3 (con't.)

**WASTE SOLVENT PICK-UP CHECKLIST**  
**BUILDINGS: 18-18A-18B-18C-32**

Date: \_\_\_\_\_

| BLDG.  | FLOOR | LOCATION                          | NORMAL<br>QUANTITY | CHECKED |    | NO. OF CONTAINERS PICKED UP |               |       | DISPOSITION                |               |       |
|--|-------|-----------------------------------|--------------------|---------|----|-----------------------------|---------------|-------|----------------------------|---------------|-------|
|  |       |                                   |                    | AREA    | pH | CHLOR.                      | NON-<br>CHLOR | OTHER | DRUM NO.<br>CHLORNON-CHLOR | LAB PACK AREA | OTHER |
| 18   | Bsmt  | 18.B.12 By Inside Door            | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18   | Bsmt  | 18.B.24 By Inside Door            | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18   | 1st   | 18.1.8 Under Fume Hood 1 - 2 gal  | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18   | 1st   | 18.1.8 Under Sink 1 - 2 gal       | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18   | 1st   | 18.1.23 Under Sink 1 - 2 gal      | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18   | 1st   | 18.1.26 Under Cabinet             | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18   | 1st   | 18.1.109 Solvent Room             | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18A  | Bsmt  | 18A.B.11.FH30 (Will Call)         | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18A  | Bsmt  | 18A.B.22                          | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18B  | Bsmt  | 18B.B.B02 Across from Hood B02B   | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18B  | Bsmt  | 18B.B.B02 North wall of Hood B02C | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18B  | 2nd   | 18B.2.B205 Hood B205 1 - 5 gal    | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18B  | 2nd   | 18B.2.B219                        | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18B  | 2nd   | 18B.2.B220 Hood B220C             | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18C  | Bsmt  | 18C.B.C05 Hood C05                | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 18C  | Bsmt  | 18C.B.C09 Hood C09                | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18C  | 1st   | 18C.1.C103 hood C103 1 - 5 gal    | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18C  | 1st   | 18C.1.C107 Hood C107              | 2 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18C  | 1st   | 18C.1.C114                        | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18C  | 1st   | 18C.1.C115                        | 1 - 2 gal          |         |    |                             |               |       |                            |               |       |
| 18C  | 2nd   | 18C.2.208                         | 2 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 32   | 1st   | 32.2-3 Under Sink (Will Call)     | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| 32   | 1st   | 32.1-4 Under Sink (Will Call)     | 1 - 5 gal          |         |    |                             |               |       |                            |               |       |
| NOTE: Identify additional pickups here and explain non-solvent pickups and other dispositions. |       |                                   |                    |         |    |                             |               |       |                            |               |       |

1. Do not pick up containers if they are not labeled correctly and have a neutralized pH. Notify area supervisor.
2. If any containers are observed to be leaking, contain the leakage and contact the applicable area supervisor.

—SEE REVERSE SIDE FOR INSTRUCTIONS—

# NON-CHLORINATED WASTE SOLVENT

## COMPONENTS AND CHARACTERISTICS

Figure 3-3

| <u>Components</u>  | <u>Ranges by Percent Volume</u> |
|--------------------|---------------------------------|
| Water              | 10-75                           |
| Acetone            | 0-5                             |
| Butyl Acetate      | 0-5                             |
| Chloroform         | 0-10                            |
| Cyclohexanone      | 0-15                            |
| Ethanol            | 0-5                             |
| Ethyl Benzene      | 0-5                             |
| Ethyl Cellulose    | 0-5                             |
| Ethyl Ether        | 0-5                             |
| Isopropyl Alcohol  | 0-5                             |
| Methanol           | 0-15                            |
| Methylene Chloride | 0-7                             |
| Propanol           | 0-5                             |
| Toluene            | 0-26                            |
| Xylene             | 0-5                             |

| <u>Components</u> | <u>Range</u>          |
|-------------------|-----------------------|
| Arsenic           | 0-2 ppm               |
| Barium            | 0-40 ppm              |
| Cadmium           | 0-1 ppm               |
| Chromium          | 0-2 ppm               |
| Copper            | 0-25 ppm              |
| Lead              | 0-15 ppm              |
| Mercury           | 0-1 ppm               |
| Nickel            | 0-10 ppm              |
| Selenium          | 0-1 ppm               |
| Silver            | 0-2 ppm               |
| Thallium          | 0-2 ppm               |
| Zinc              | 0-10 ppm              |
| pH                | 5-9                   |
| Specific Gravity  | 0.8 -1.1 g/ml         |
| Cyanide           | 0-2 mg/kg             |
| Sulfide           | 0-10 mg/kg            |
| Ash Content       | 0-1 %                 |
| TSS               | 100-500 mg/l          |
| Flashpoint        | 10-100 C              |
| TOX               | 0-15 %Cl              |
| BTU               | 2,500 - 7,500 per lb. |

The wastes that are termed non-halogenated are classified as listed hazardous wastes with waste codes of F003 and F005. They are listed on the basis of their ignitability and toxicity. Miles has determined these wastes to be hazardous due to the presence or potential presence of the following materials:

- a. Laboratory and Extraction solvents containing xylene, acetone, ethyl benzene, methyl isobutyl ketone, cyclohexanone, and methanol, and
- b. laboratory and extraction solvents containing toluene.

In most instances, there is also an alcohol, such as methanol or ethanol in the waste adding to the flammability of the mixture. In these cases the waste is also classified as DOT flammable and EPA ignitable (D001) due to a flash point of less than 100°F.

Other characteristic waste codes applicable to this waste include the following:

|                      |      |
|----------------------|------|
| Arsenic              | D004 |
| Lead                 | D008 |
| Mercury              | D009 |
| Benzene              | D018 |
| Carbon Tetrachloride | D019 |
| Chloroform           | D022 |
| Methyl Ethyl Ketone  | D035 |

Miles has determined that these materials are hazardous wastes due to our familiarity with the processes generating the waste, the materials used, and the laboratory analyses for the wastes. Laboratory reports for representative samples of the non-chlorinated waste are given in Appendix I-1.

The locations where the wastes are picked up are also shown in Figure 3-2.

#### Miscellaneous Laboratory Chemicals:

Through the day-to-day operations of the research and development laboratories, a variety of spent miscellaneous lab chemicals are generated. The materials can be in solid, liquid, or gas form and can have a variety of characteristics. Many of the wastes are listed as toxic or acutely toxic, others are listed only on the basis of their characteristics. Figure 3-4 is a compilation of the materials that could be seen in the storage facility at Building 35. Included in the figure

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PEZ



is the listing of the P and U waste codes for the materials and some characteristic waste codes.

These wastes are accumulated at the point of generation and, at Building 35, are segregated on the basis of their compatibility. Information as to their characteristics and properties are obtained from the following publications:

Chemical Dictionary  
Merck Index  
SAX Handbook of Hazardous Industrial  
Chemicals

This information is used with the compatibility chart shown in Appendix I-2 to determine proper segregation in Building 35.

3.1b Containerized Waste

The solvent waste produced at Miles is collected in 5-gallon containers and transferred to 55-gallon drums at Building 35. Virtually all of the wastes except for a few of the dry laboratory chemicals, contain free liquids. The drums, stored in Building 35, are in a diked, enclosed area that provides secondary containment. There are no other hazardous waste storage areas at the Myrtle Street Plant. No wastes are stored without secondary containment; therefore, no testing for free liquids will be performed.

Attachment VI provides information on the storage facility and shows the containment system for the building.

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PEZ

## LIST OF WASTE CHEMICALS 805068705

| <u>CHEMICAL</u>       | <u>EPA ID#</u> |
|-----------------------|----------------|
| Acetaldehyde          | U001           |
| Acetone               | U002           |
| Acetonitrile          | U003           |
| Acetophenone          | U004           |
| Acetyl chloride       | U006           |
| Acrolein              | P003           |
| Acrylamide            | U007           |
| Acrylic Acid          | U008           |
| Acrylonitrile         | U009           |
| Allyl alcohol         | P005           |
| Allyl bromide         | D001           |
| Allyl chloride        | D001           |
| Aluminum chloride     | D002           |
| Aminopyridine         | P008           |
| Ammonium hydroxide    | D002           |
| Ammonium picrate      | P009           |
| Ammonium persulfate   | D001           |
| Ammonium thiocyanate  | P030           |
| Amyl acetate          | D001           |
| Amyl alcohol          | D001           |
| Aniline               | U012           |
| Arsenic acid          | P010           |
| Arsenic oxide         | P012           |
| Arsenic pentoxide     | P011           |
| Aziridine             | P054           |
| Barium acetate        | D005           |
| Barium chloride       | D005           |
| Barium hydroxide      | D005           |
| Barium oxide          | D005           |
| Benzene               | U019           |
| Benzene, 1,2-dichloro | U070           |
| Benzene, 1,3-dichloro | U071           |
| Benzene, 1,4-dichloro | U072           |
| Benzenesulfonic acid  | D002           |
| Benzidine             | U021           |
| p-Benzoquinone        | U197           |
| Benzyl chloride       | P028           |
| Boric acid            | D002           |
| Boron trichloride     | D002           |
| Bromoacetaldehyde     | D001           |
| Brucine               | P018           |
| Butanedione monoxime  | D001           |
| Butyl alcohol         | U031           |
| Butyl methacrylate    | D001           |
| Cacodylic acid        | U136           |
| Cadmium chloride      | D006           |
| Calcium chromate      | U032           |
| Calcium nitrate       | D001           |
| Carbon disulfide      | P022           |
| Carbon tetrachloride  | U211           |

LIST OF WASTE CHEMICALS

| <u>CHEMICAL</u>                      | <u>EPA ID#</u> |
|--------------------------------------|----------------|
| Carbonyl iron powder                 | D001           |
| Ceric Sulfate                        | D001           |
| Chloroacetyl chloride                | D002           |
| p-Chloroaniline                      | P024           |
| Chlorobenzene                        | U037           |
| Chlorobenzoyl chloride               | D002           |
| Chloroform                           | U044           |
| Chlorophenol                         | U048           |
| Chloropropionaldehyde diethyl acetal | D001           |
| Chlorosuccinimide                    | D002           |
| Chromic acid, and salts              | D002, D007     |
| Chromic sulfate                      | D007           |
| Chrysene                             | U050           |
| Copper Cyanide                       | P029           |
| Cresol                               | U052           |
| Crotonyl chloride                    | D001           |
| Cumene                               | U055           |
| Cyanogen bromide                     | U246           |
| Cyanuric chloride                    | P030           |
| Cyclohexane                          | U056           |
| Cyclohexanone                        | U057           |
| Dibutyl phthalate                    | U069           |
| Dichloroacetic acid                  | D002           |
| Dichlorobenzoyl chloride             | D002           |
| 2,4-Dichlorophenol                   | U081           |
| 2,6-Dichlorophenol                   | U082           |
| 1,3-Dichloropropene                  | U084           |
| Diethylamine                         | D001           |
| Diethyl phthalate                    | U088           |
| Difluorophosphoric acid              | D002           |
| Dihydropyran                         | D001           |
| Diisobutyl aluminum hydride          | D001           |
| Dimethoxypropane                     | D001           |
| Dimethylamine                        | U092           |
| Dimethylcarbonyl chloride            | U097           |
| Dimethyldichlorosilane               | D001           |
| Dimethylformamide                    | D001           |
| alpha, alpha-Dimethyl phenethylamine | P046           |
| Dimethyl phthalate                   | U102           |
| 2,4-Dinitrophenol                    | P048           |
| 2,4 Dinitrotoluene                   | U105           |
| 2,6-Dinitrotoluene                   | U106           |
| Diethyl phthalate                    | U107           |
| 1,4-Dioxane                          | U108           |
| Epichlorohydrin                      | U041           |
| Ethane, 1,1-dichloro                 | U076           |
| Ethane, 1,2-dichloro                 | U077           |
| Ethane, 1,1,1-trichloro              | U226           |
| Ethanal                              | U001           |
| Ethanolamine                         | D002           |

LIST OF WASTE CHEMICALS

| <u>CHEMICAL</u>                  | <u>EPA ID#</u> |
|----------------------------------|----------------|
| Ethyl acetate                    | U112           |
| Ethyl alcohol                    | D001           |
| Ethyl bromoacetate               | D002           |
| Ethyl chloride                   | D001           |
| Ethyl chloroformate              | D001           |
| Ethylene dibromide               | U067           |
| Ethylene dichloride              | U077           |
| Ethylene glycol monobutyl ether  | D001           |
| Ethylene glycol monomethyl ether | D001           |
| Ethylenimine                     | P054           |
| Ethyl carbamate                  | U238           |
| Ethyl ether                      | U117           |
| Ethyl formate                    | D001           |
| Ethyl methane sulfonate          | U119           |
| Ferric chloride                  | D002           |
| Fluoboric acid                   | D002           |
| Formaldehyde                     | U122           |
| Formic acid                      | U123           |
| Furan                            | U124           |
| Furfural                         | U125           |
| Gloxylic acid                    | D002           |
| Heptaldehyde                     | D001           |
| Hexane                           | D001           |
| Hexanoic acid                    | D002           |
| Hydrazine                        | U133           |
| Hydrochloric acid                | D002           |
| Hydrogen fluoride                | U134           |
| Hydrogen sulfide                 | U135           |
| Hydroxylamine hydrochloride      | D002           |
| Isobutyl chloroformate           | D001, D002     |
| Lead acetate                     | U144           |
| Lead dioxide                     | D001           |
| Lithium aluminum hydride         | D001, D003     |
| Lithium perchlorate              | D001           |
| Magnesium nitrate                | D001           |
| Manganese dioxide                | D001           |
| Maleic anhydride                 | U147           |
| Malononitrile                    | U149           |
| Mercuric oxide                   | D009           |
| Mercuric sulfide                 | D009           |
| Mercury                          | U151           |
| Methacrylic acid                 | D002           |
| Methanesulfonyl chloride         | D002           |
| Methanol                         | U154           |
| Methylal                         | D001           |
| Methylene chloride               | U080           |
| Methyl ethyl ketone              | U159           |
| Methyl hydrazine                 | P068           |
| Methyl iodide                    | U138           |
| Methyl isobutyl ketone           | U161           |

LIST OF WASTE CHEMICALS

| <u>CHEMICAL</u>   | <u>EPA ID#</u>   |
|---|------------------|
| Methyl methacrylate   | D001, D003       |
| Methylstyrene   | D001             |
| Methyl vinyl ketone   | D001             |
| Naphthalene   | U165             |
| 1-Naphthalenamine   | U167             |
| 1,4-Naphthoquinone  | U166             |
| Nicotine  | P075             |
| Nitric acid   | D002             |
| Nitroaniline  | P077             |
| Nitrobenzene  | U169             |
| Nitromethane  | D001             |
| p-Nitrophenol   | U170             |
| Oleum   | D002             |
| Osmium tetroxide  | P087             |
| Oxirane   | U115             |
| Paraldehyde   | U182             |
| Pentyne   | D001             |
| Perchloric Acid   | D001             |
| Periodic Acid   | D001             |
| Phenacetin  | U187             |
| Phenol  | U188             |
| Phosgene  | P095             |
| Phosphoric acid   | D002             |
| Phosphorus oxychloride  | D002             |
| Phosphorus pentoxide  | D001, D002, D003 |
| Phosphorus trichloride  | D002, D003       |
| Phosphotungstic acid  | D001, D002       |
| Phthalic anhydride  | U190             |
| Potassium tert-butylate   | D001, D003       |
| Potassium cyanide   | P098             |
| Potassium dichromate  | D001             |
| Potassium dichromate, sulfuric acid, mercuric sulfate, silver sulfate | D002, D009, D011 |
| Potassium fluoride  | D002             |
| Potassium hydroxide   | D002             |
| Potassium metal   | D001, D003       |
| Potassium nitrate   | D001             |
| Potassium nitrite   | D001             |
| Potassium permanganate  | D001             |
| Potassium thiocyanate   | P030             |
| Propane, 1,2-dichloro   | U083             |
| Propylene glycol  | D001             |
| Pyridine  | U196             |
| Resorcinol  | U201             |
| Saccharin   | U202             |
| Silver nitrate  | D001             |
| Sodium amalgam  | D001, D003, D009 |
| Sodium arsenite   | D004             |
| Sodium azide  | P105             |
| Sodium bisulfate  | D002             |

LIST OF WASTE CHEMICALS

| <u>CHEMICAL</u>           | <u>EPA ID#</u> |
|---------------------------|----------------|
| Sodium borohydride        | D001,D003      |
| Sodium chlorate           | D001           |
| Sodium cyanide            | P106           |
| Sodium cyanoamide         | P030           |
| Sodium hydroxide          | D002           |
| Sodium metal              | D001,D003      |
| Sodium methylate          | D001           |
| Sodium nitrate            | D001           |
| Sodium nitrite            | D001           |
| Sodium perborate          | D001           |
| Sodium perchlorate        | D001           |
| Sodium periodate          | D001           |
| Sodium trichlorophenate   | D002           |
| Strontium peroxide        | D001           |
| Sulfanilic acid           | D002           |
| Sulfuric acid             | D002           |
| 1,1,1,2-Tetrachloroethane | U208           |
| 1,1,2,2-Tetrachloroethane | U209           |
| Tetrahydrofuran           | U213           |
| Tetramethylsilane         | D001           |
| Thiourea                  | U219           |
| Titanium tetrachloride    | D002           |
| Titanium trichloride      | D001           |
| Toluene                   | U220           |
| Toluenediamine            | U221           |
| Toluenesulfonic acid      | D002           |
| Trichloroacetic acid      | D002           |
| Trichloroethylene         | U228           |
| Triethylamine             | D001           |
| Vinyl chloride            | U043           |
| Xylene                    | U239           |
| Zinc chloride             | D002           |
| Zinc nitrate              | D001           |

# NATIONAL ANALYTICAL LABORATORIES

A Division of



JOHN S. FEZY  
MILES INC.  
1127 MYRTLE STREET

REPORT NUMBER: 5703A02

PAGE 12

SAMPLE IDENTIFICATION: 5703-02  
CUSTOMER IDENTIFICATION: #2  
DATE SAMPLED: 11/09/89  
TYPE OF MATERIAL: SOLVENT

DATE RECEIVED: 11/10/89  
DATE COMPLETED: 12/28/89

| PARAMETER                     | REF. METHOD | DET. LIMIT | RESULT   |
|-------------------------------|-------------|------------|----------|
| 2,6-DINITRO-O-CRESOL          | EPA 8270    | 250 MG/L   | BDL MG/L |
| 2,4-DINITROPHENOL             | EPA 8270    | 250 MG/L   | BDL MG/L |
| 2,4-DINITROTOLUENE            | EPA 8270    | 50 MG/L    | BDL MG/L |
| 2,6-DINITROTOLUENE            | EPA 8270    | 50 MG/L    | BDL MG/L |
| 2-SEC-BUTYL-4,6-DINITROPHENOL | EPA 8270    | 50 MG/L    | BDL MG/L |
| DI-N-OCTYL PHTHALATE          | EPA 8270    | 50 MG/L    | BDL MG/L |
| DIPHENYLAMINE                 | EPA 8270    | 50 MG/L    | BDL MG/L |
| DISULFOTON                    | EPA 8270    | 50 MG/L    | BDL MG/L |
| ENDOSULFAN I                  | EPA 8270    | 50 MG/L    | BDL MG/L |
| ENDOSULFAN II                 | EPA 8270    | 50 MG/L    | BDL MG/L |
| ENDOSULFAN SULFATE            | EPA 8270    | 50 MG/L    | BDL MG/L |
| ENDRIN                        | EPA 8270    | 50 MG/L    | BDL MG/L |
| ENDRIN ALDEHYDE               | EPA 8270    | 50 MG/L    | BDL MG/L |
| ETHYL METHANESULFONATE        | EPA 8270    | 50 MG/L    | BDL MG/L |
| ETHANPHUR                     | EPA 8270    | 50 MG/L    | BDL MG/L |
| FLUORANTHENE                  | EPA 8270    | 50 MG/L    | BDL MG/L |
| FLUORENE                      | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEPTACHLOR                    | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEPTACHLOR EPOXIDE            | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEXACHLOROBENZENE             | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEXACHLOROBUTADIENE           | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEXACHLOROCYCLOPENTADIENE     | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEXACHLOROETHANE              | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEXACHLOROPHENE               | EPA 8270    | 50 MG/L    | BDL MG/L |
| HEXACHLOROPROPENE             | EPA 8270    | 50 MG/L    | BDL MG/L |
| INDENO(1,2,3-CD)PYRENE        | EPA 8270    | 50 MG/L    | BDL MG/L |
| ISODRIN                       | EPA 8270    | 50 MG/L    | BDL MG/L |
| ISOPHORONE                    | EPA 8270    | 50 MG/L    | BDL MG/L |
| ISOSAFROLE                    | EPA 8270    | 50 MG/L    | BDL MG/L |
| KEPONE                        | EPA 8270    | 50 MG/L    | BDL MG/L |
| METHAPYRILENE                 | EPA 8270    | 50 MG/L    | BDL MG/L |
| METHOXYCHLOR                  | EPA 8270    | 50 MG/L    | BDL MG/L |
| 3-METHYLCHOLANTHRENE          | EPA 8270    | 50 MG/L    | BDL MG/L |
| METHYL METHANESULFONATE       | EPA 8270    | 50 MG/L    | BDL MG/L |
| METHYLNAPHTHALENE             | EPA 8270    | 50 MG/L    | BDL MG/L |
| METHYL PARATHION              | EPA 8270    | 50 MG/L    | BDL MG/L |
| NAPHTHALENE                   | EPA 8270    | 50 MG/L    | BDL MG/L |
| 1,4-NAPHTHOQUINONE            | EPA 8270    | 50 MG/L    | BDL MG/L |
| 1-NAPHTHYLAMINE               | EPA 8270    | 50 MG/L    | BDL MG/L |

BDL = BELOW DETECTION LIMIT